THE SCHOOL REVIEW

A JOURNAL OF SECONDARY EDUCATION

VOLUME XXXVIII APRIL 1930 NUMBER 4

Educational News and Editorial Comment

THE DEPARTMENT OF SECONDARY-SCHOOL PRINCIPALS OF THE NATIONAL EDUCATION ASSOCIATION

The Department of Secondary-School Principals of the National Education Association held its annual meeting in Atlantic City, New Jersey, February 24–26. The proceedings of the meeting are published in Bulletin No. 30 of the Department and are available to members or to anyone sending two dollars to the secretary of the Department.

Despite the fact that an excellent program was offered, the attendance was the smallest in recent years. The program consisted of three general and two special sessions. The general sessions were devoted chiefly to discussions of the problems of secondary-school reorganization and finance, and the special sessions to problems of articulation between the three units of the secondary-school system —junior high school, senior high school, and junior college.

A section of one of the special sessions was devoted to reports from members of the Committee on Organization of Investigations in Secondary Education. Activities carried on by various local organizations were reported, and plans were proposed for furthering research to be carried on by groups of principals desiring to engage in co-operative investigations. Considerable attention was given to

BOSTON UNIVERSITY
COLLEGE OF LIBERAL ARTS
LIBRARY

the national survey of secondary education authorized by Congress in the spring of 1929 and now being conducted by the commissioner of education. The survey will continue during the next two and one-half years. The general outline of the survey was discussed by Professor L. V. Koos, associate director of the survey. Copies of the outline may be obtained from the United States Office of Education, Washington, D.C.

The officers of the Department of Secondary-School Principals elected for the ensuing year are: President: Louis E. Plummer, principal of the Union High School, Fullerton, California. First vice-president: C. H. Threlkeld, principal of the Columbia High School, South Orange, New Jersey. Second vice-president: John A. Larson, principal of the Senior High School, Little Rock, Arkansas. Executive committee: Milo H. Stuart, principal of the Arsenal Technical High School, Indianapolis, Indiana; F. R. Born, principal of the Junior High School, Ardmore, Oklahoma; and W. C. Giese, principal of the Washington Park High School, Racine, Wisconsin. Executive secretary: H. V. Church, superintendent of the J. Sterling Morton High School and Junior College, Cicero, Illinois.

A JOURNAL DEALING WITH COLLEGE AND UNIVERSITY EDUCATION

In January of this year the Ohio State University began the publication of a new journal entitled the *Journal of Higher Education*. The editor, Professor W. W. Charters, describes the origin and purposes of the journal in an editorial as follows:

> While Dr. Buckingham was editor of the *Journal of Educational Research* he received enough unsolicited articles in the field of higher education to fill another journal. Dr. Kelly, secretary of the Association of American Colleges, is convinced that the most active area in the whole educational field is the college division. The popular magazines each month carry a score or more of articles, each of them dealing with problems of college education. The number of formal studies issuing from universities and colleges in printed, mimeographed, and typewritten form is steadily increasing. Heretofore, however, the materials presented in print are found at scattered sources—in the learned journals of the departments of the university and in the journals on general and special education.
>
> To a group of men interested in the problems of instruction and administration in colleges and universities it seems for these and other persons that there is a place for a journal devoted entirely to the field which this journal will serve.

The objectives of the *Journal of Higher Education* are more definite now than they may be later. Its columns are open for the discussion of problems of policy and administration. The editors are particularly interested, however, in the presentation of scientific studies through which instructional and administrative techniques may be evaluated with increasing exactness.

The appearance of a publication of this kind has great significance. It is evidence of the fact that the colleges and universities have come very generally to feel the effects of the scientific studies which have become the dominant facts in secondary and elementary education. The changes in the curriculums of the lower schools and the adoption of scientific methods of evaluating the results of the operations of these schools have so profoundly affected the work of the higher institutions that they too must begin to experiment with new methods of teaching and administration and with measurements which shall guide their undertakings.

Principals of public schools will gain much information regarding the most progressive movements in college and university education by reading this important addition to the list of American educational journals.

A PAPAL ENCYCLICAL ON EDUCATION

An Associated Press dispatch from Rome under date of January 11 reports the contents of an encyclical issued by the Pope the title of which is "Of Christian Education of the Young." The parts of the dispatch which are of most immediate interest to educators are as follows:

The Pontiff declared himself against three modern theories of education—pedagogic naturalism, or the system of letting the child use its own individuality; sex education; and coeducation.

"Every method of education founded wholly or in part on a denial or forgetfulness of original sin and of grace, and therefore on the sole forces of human nature, is false," the encyclical said. "Such are generally those systems of today, under various names, which appeal to the pretended freedom and unconfined liberty of the child and diminish and also suppress the authority and work of the educator, attributing to the child exclusive privacy of initiative and activity independent of all superior natural and divine laws in working out its own education."

Of sex education, the encyclical said:

"Greatly dangerous is that naturalism which invades the field of education, and widely diffused is the error of those who, with dangerous pretension and

ugly words, promote so-called 'sex education,' falsely pretending to be able to fortify the young against dangers of the senses with means purely natural, frightful subjects and preventive instructions for all indiscriminately and also publicly and worse still with exposing them for a time to trials in order to harden the soul against such perils."

Discussing coeducation, the encyclical said:

"Similarly erroneous and pernicious to Christian education is the so-called 'method of coeducation'; the Creator has ordained the perfect co-existence of the sexes only in the unity of matrimony and by distinct degrees in the family and in society."

The Pope said that the state must avoid any excess concerning the physical and military education of children. In general, the temporal power, meaning the state, must not conflict with the spiritual one in the same way that reason must not conflict with faith, but there must be scientific liberty together with didactic liberty, the Pontiff said.

The encyclical asserted that the church had a divine mandate over the education of children, joined with the infallible mission intrusted to the church. Therefore, the church has a leading part in the education of children, sharing with the family, which comes before the state. To the state is reserved the complementary work of education with the church and the family, without, however, taking the place of either the church or the family in the work they are entitled to do.

The Pope said that the social atmosphere of the school could be organized by the state, but in so doing the state must avoid damage caused by lay schools and by neutral schools as well as by schools in countries having various religions.

Schools, the Pontiff said, ought to be organized to form the true Christian, namely, the true man of character enlightened by faith and the example of Jesus Christ—that is to say, the man most perfect and most useful to society. The encyclical ended by recalling the words of St. Augustine as to the educational mission of the church.

The *New York Times* commented on the encyclical editorially as follows:

The Pope's encyclical sounds a note that will startle Americans, for it assails the institution dearest to them—the public school—without which it is hardly conceivable that democracy could long exist. As was said only yesterday by a critical authority, despite its shortcomings and mistakes, the public school has "already contributed to society more than all other agencies combined." Under its tuitions not only are the elemental lessons which the race has learned taught to children of diverse traditions, racial qualities, and religious faiths, but these children have been prepared to live together as citizens in a self-governing state. If the declaration of the encyclical were scrupulously obeyed by those to whom it is addressed, the public school would be emptied of all its Catholic

pupils except as the bishop in his discretion in special circumstances may permit them to remain. The language of the encyclical is:

"We, therefore, confirm our previous declarations and sacred canons forbidding Catholic children to attend anti-Catholic, neutral or mixed schools, by the latter being meant those schools open equally to Catholics and non-Catholics."

If other churches were to make like claim—that is, that "the educative mission belongs pre-eminently" to them for their children—and were to lay like inhibitions, the very foundations of this Republic would be disturbed.

Probably the Pontiff had Italy specially in mind, but his encyclical is addressed to the world and must be assumed to have the same authority here in his church. One wonders whether he, with all his wisdom, does not know with what civic fervor Catholics and Protestants, Jews and Gentiles alike unite to support what he calls "neutral" or "mixed" schools. One outstanding illustration of the championing of the public schools by a Catholic is former Governor Smith's official and personal aggressive interest in the public schools of this state. It is a matter of common knowledge that no governor in recent times has done more in their behalf or has had a more intelligent and persistent concern for their betterment. Yet the encyclical, which recalls earlier encyclicals and canons of similar import, would, if followed in its letter and spirit, tend to tear down what this Catholic governor was active in building up. It would, by implication, also forbid a devout Catholic to teach in a school in which Catholic doctrine is not permitted to be taught.

Even if the teaching of religious doctrine is forbidden in public schools, since several faiths are usually represented in every school, "every Christian child" (and every other child of whatever faith its parents may be) "has the right to be taught in conformity with the doctrines of the church." In this state and in many others provision is made in the school program for excusing pupils so that they may at certain hours in the school week attend upon religious instruction outside the school. Nor does the state oblige any child to attend a public school if satisfactory instruction in subjects deemed by the state essential to citizenship is given it in a private or church school. No claim is made here that the child exists for the state, but the state for the child's sake in manhood and womanhood and for its own sake must see that every child has an opportunity to be "maximally competent" according to its gifts. As Emerson said, "to make the wise man the state exists"; and that means to help make each capable of his highest wisdom, working through the family and with the spiritual agencies existing within the state.

It is unnecessary in the United States to say anything in defense of public schools. Furthermore, it is quite certain that these schools will be mixed and that the great majority of them will be coeducational. It is to be hoped that the pupils who attend American schools

will in ever increasing degree become intelligently moral. The day when life is to be kept pure by the practice of seclusion is past. The strongest characters are developed by contact with the environment in which life is to be lived. The answer of American schools to the challenge of conservatism is that they will not abandon their established democratic policies but will make every endeavor to improve the training of all who seek to gain preparation for citizenship in a nation which is characterized by religious tolerance and by large participation in its activities by both men and women.

VOCATIONAL EDUCATION AND GENERAL EDUCATION

It is very desirable that education be made sufficiently comprehensive to supply every young person with the training which will best fit him for life. Such a statement as this is so generally accepted that it seems almost futile to repeat it. There is, however, one group of people in the United States who are so bent on conducting a campaign for the disruption of the educational system that they cannot be content to emphasize anything but their own specialty. This is the group of writers and speakers who vociferously advocate vocational education as opposed to general education.

A document which is very revealing in its exhibition of the spirit which pervades the group referred to is as follows:

AMERICAN VOCATIONAL ASSOCIATION

LEGISLATIVE COMMITTEE

TOPEKA, KANSAS, February 3, 1930

You are familiar, of course, with the fact that the whole program of education in this country is being subjected to rather careful scrutiny by the National Advisory Committee on Education as well as many other leaders and laymen. Because of the fact that vocational education is a government activity and because of the fact that it is relatively new, it will naturally come in for more critical consideration perhaps than other parts of our educational program. Some of the members of the National Advisory Committee at least are not in sympathy with vocational education.

You know also that the superintendents' section of the National Education Association will hold its annual convention in Atlantic City February 22 to 28, and, because of the peculiar situation existing at this time in educational circles, this will probably be a most important meeting. The activities of the National Advisory Committee on Education are certain to be the subject of many discussions, both on public platform and in hotel and Pullman-car conferences.

Since it is going to be such an important meeting and since the cause of vocational education is being weighed in the balance in the minds of many administrative school officers, it is suggested that, if at all possible, you plan to attend that meeting in Atlantic City. It will be to the advantage of vocational education to have vocational educators present.

Furthermore, we have a new bill almost ready to introduce into Congress asking for additional appropriations for trade and industrial and commercial education. The different sections of the country are not in entire agreement in regard to this bill. A meeting of as many members of the Legislative Committee as can be present will be held at Atlantic City during the week of February 22 to 28, at which time we hope to get the bill into final form for introduction into Congress; and we hope to have it introduced within a few days after this conference. We should like to have as many vocational educators present as possible to give consideration to the bill in order to facilitate the matter of reaching agreements on such sections as there are differences of opinion.

It is not the purpose of this letter to create any undue apprehension or uneasiness with regard to the outlook for vocational education, but rather to urge upon those interested in it the importance of this meeting. Mr. Paul W. Chapman, president of the American Vocational Association, and I join in urging you to be present at Atlantic City if at all convenient.

So far as I know, there is no other thought but that we shall go forward with our legislative program as promptly as possible and prosecute it as vigorously as our energy will permit. In other words, it is our plan to be on the offensive, playing a defensive game only when it becomes absolutely necessary. We hope and feel sure that we shall have the concerted efforts of all interested in vocational education in this legislative effort.

A copy of this letter is being sent to all state directors of vocational education and to all state supervisors of trade and industrial education. If there are others in your state to whom this message should be sent, please relay it to them promptly.

Sincerely yours,

C. M. MILLER, *Chairman*
Legislative Committee
American Vocational Association

So far as the present writer knows, there is not a single member of the National Advisory Committee on Education who is "not in sympathy with vocational education." The effort of the chairman of the Legislative Committee of the American Vocational Association to stir up partisan feeling is a form of disloyalty to American education which ought to be sharply reproved. It is the belief of the present writer that the statement quoted will be disapproved by every right-minded person.

C. H. J.

A CORRECTION

A communication from George W. Fowler, supervisor of science in the city schools of Syracuse, New York, calls attention to the fact that the statement quoted on page 82 of the February, 1930, issue of the *School Review* misrepresents the position with regard to sciences and languages in the high-school curriculum taken by the committee of the New York State Science Teachers Association of which he was chairman. Mr. Fowler wishes to make it clear that both sciences and languages are thought by this committee to have proper places in the curriculum. Neither of the two groups of subjects should be eliminated; they should be made equally accessible. "Science-minded" pupils will then have equal opportunity with "language-minded" pupils.

ENROLMENTS IN HIGH-SCHOOL SUBJECTS

Secondary Education, Bulletin No. 22, 1929, of the United States Office of Education, prepared by Carl A. Jessen, specialist in secondary education, contains the following statement.

During the school year 1927–28 the Bureau of Education asked public secondary schools of the nation to report enrolments by subjects. Returns from these reports are being tabulated and will appear in another section of the Biennial Survey of Education for 1926–1928. At the time of writing, incomplete tabulations have been made for nine states, namely, California, Iowa, Louisiana, Massachusetts, Minnesota, New Jersey, Ohio, Texas, and Washington.

In these states 609,893 pupils were enrolled in the schools which have reported. The percentages which the enrolments in various subjects were of this total enrolment are indicated in Table I. To show trends, parallel percentages are given for subject enrolments in the same nine states in 1922, when the last previous tabulation of this kind was made by the Bureau of Education. The number of high-school subjects reported by these states in 1928 was 243. In order to make the items for 1928 and 1922 comparable in Table I, it was necessary greatly to reduce this number by grouping subjects.

Emphasis, as measured by pupil enrolment in the various major departments, is in the following order: English, social studies, mathematics, science, commercial subjects, and foreign languages. In 1922 the order was English, social studies, mathematics, science, foreign languages, and commercial subjects. The most pronounced increase in enrolment has taken place in English and in commercial work; social-studies and science enrolments have remained relatively stationary; mathematics and foreign languages have lost.

Among individual subjects it is apparent that American history is gaining at the expense of foreign history; general mathematics is making inroads into

TABLE I

PERCENTAGES OF PUPILS IN NINE STATES ENROLLED IN VARIOUS HIGH-SCHOOL SUBJECTS, 1928 AND 1922

Subject	Percentage of Total Enrolment, 1928	Percentage of Total Enrolment, 1922
English	95.01	80.40
American history	18.26	15.57
Foreign history	28.97	32.93
Other history	0.33	0.57
Civics (community civics included)	16.52	18.44
Sociology	3.25	2.71
Economics	5.31	5.48
Other social studies	3.60	*
Physics	6.83	9.13
Chemistry	7.84	7.99
General science	18.12	17.83
Physical geography	2.36	3.89
Botany	1.19	2.86
Zoölogy	0.32	1.04
Biology	11.41	7.12
Physiology	2.26	5.20
Hygiene and sanitation	6.60	4.54
Other science	0.96	0.24
Algebra (beginning and advanced)	31.24	36.99
Geometry (plane and solid)	18.82	21.95
General mathematics	6.21	*
Arithmetic (advanced and commercial)	9.09	11.97
Other mathematics	1.63	1.93
Latin	18.67	22.44
French	11.87	15.79
Spanish	13.16	15.16
German	1.67	0.66
Other foreign languages (Greek, Italian, Norse, Swedish, Hebrew)	0.29	0.24
Bookkeeping	10.61	14.27
Shorthand	8.69	9.18
Typewriting	16.19	13.86
Commercial law	3.36	1.25
Commercial geography	5.14	1.92
Penmanship	1.28	2.02
Spelling	0.30	0.72
Office practice	1.66	0.28
Business organization	3.26	0.03
Other commercial subjects	1.59	0.32
Physical training	17.11	6.39
Agriculture	3.17	4.56
Home economics	20.32	14.99
Manual training	12.68	12.67
Mechanical drawing	8.39	3.12
Music	26.53	25.40
Art and drawing	10.11	12.66
Normal training	0.94	1.04
Public speaking	2.32	1.32
Printing	1.14	0.22
Subjects not listed above	0.23	0.01

* Not reported.

enrolments in algebra and geometry; biology and hygiene and sanitation show material increases; physics is losing; physiography and physiology are receding in importance; botany and zoölogy have almost disappeared as separate subjects; all the foreign languages most frequently taught have dropped in percentage of pupils registered; in commercial work bookkeeping has lost, while typewriting, commercial law, commercial geography, office practice, and business organization register increasing numbers of pupils; home economics enrolments show a substantial increase; mechanical drawing is becoming important in the number of pupils enrolled; physical education has had more convincing growth in enrolment than any other major individual subject.

There has been displayed between the two years covered by this report unprecedented activity in study, construction, and revision of the secondary-school curriculum. Much remains to be done. In fact, one of the important principles which has more and more clearly emerged with the unfolding of the movement is that curriculum study is never done. Society demands of the curriculum-maker that he be continually on the alert, adapting old courses and developing new ones to meet the needs of changing conditions. In that direction lies progress.

HENRY FORD AND TECHNICAL EDUCATION

The Ford plant in Detroit has conducted for some time a school for boys who are selected by the employment department as probably acceptable for ultimate employment in the Ford factories. The boys in this school are paid for their work and are taught both technical skills and general school subjects. The success of this school lends large significance to an announcement recently circulated by the Associated Press. The announcement is as follows:

Henry Ford will devote the remainder of his life to education and, in developing his ideas, will spend perhaps $100,000,000.

The Detroit motor-car manufacturer said he wanted to do everything he could to help young men to fit themselves for the world.

He said he would build schools in various parts of the country, and, while he did not yet know their exact number or location, he said the nucleus would be the Edison Institute of Technology, founded last year at Dearborn, Michigan, during the celebration of the golden anniversary of the electric light.

Mr. Ford said he believed every youth should learn a trade, to keep him active and out of trouble. He said that, when students come out of school, they should be in demand and not be shifted about aimlessly.

The manufacturer said that, when a young man goes to an employer and asks for a position, he should be proficient in some specific work. He believes the mere statement that the boy is a graduate of a high school or a college is insufficient.

In announcing Mr. Ford's plans, the Detroit papers added one comment which perhaps should be repeated here. Mr. Ford does not want any advice. His method of procedure is evidently clear to his own mind, and he intends to conduct his project along lines which are original and definitely settled.

SUPERIOR SCHOLARSHIP OF YOUNG STUDENTS

The following statement was published in the *New York Times*.

The theory recently advanced by Dr. A. Lawrence Lowell, president of Harvard, that the younger undergraduates at colleges generally excel in scholarship those of more mature years was upheld in a statement issued by Dr. Frederick B. Robinson, president of the College of the City of New York, in discussing the findings of the personnel bureau under the direction of Dr. Arthur F. Payne.

During the past three semesters the personnel bureau has given more than thirty thousand psychological tests to entering Freshmen and Sophomores. The tabulated results, it was reported, reveal a distinct superiority of the younger men. It also was announced that a steady decrease in the average age of entering students has been noted.

"The average age of students actually admitted to the College is tending to decrease," Dr. Robinson declared. "For instance, in the class entering in February, 1929, there were 43 Freshmen under sixteen; in September, 1929, there were 121. Although statistics are not complete for this term, the director of the personnel bureau believes that it will be lower than a year ago. This average is lower than in most colleges, and we attribute it to the fact that our severe entrance requirements exclude students of lower mentality. It is true that, as a group, the students who complete high school at an early age are intellectually superior to students who complete high school at eighteen or over."

This view is corroborated by statistical findings, he said. In the September term the average age of entering Freshmen was 17.4. One was 14.2, and there were many who were fifteen, sixteen, and seventeen. The oldest Freshman was thirty-three. Dr. Robinson declared that the group below the average entering age made better records in their intelligence tests and in general were more successful than the older students. The majority of those dropped for poor scholarship at the end of the first semester came from the over-age group, he said. The thirty-three-year-old man was dropped out.

"The inquiry concerning the relation of age on entering college to academic effectiveness is only one division of the investigation," Dr. Robinson explained. "We shall also study the relation of general intelligence as gauged by the tests to success in studies generally and in particular studies. Furthermore, we shall seek to discover whether traits of character can be actually diagnosed in ad-

vance so that they will correspond with subsequent performance in the various college departments. Thus far our experience indicates that Dr. Lowell was right in his remarks."

AN INTENSIVE STUDY OF COLLEGE FRESHMEN

The colleges and high schools in the state of Pennsylvania are engaged in a study of the students who pass from the lower schools into the institutions of higher education. This study is sponsored by the State Department of Public Instruction and is supported in part by the Carnegie Foundation for the Advancement of Teaching. The results of the work carried on during the academic year 1928–29 are published in the Twenty-fourth Annual Report of the Carnegie Foundation in a section entitled "Study of the Relations of Secondary and Higher Education in Pennsylvania." This section of the report was prepared by William S. Learned and is available in the form of a reprint of eight pages. Some extracts from this section are as follows:

The study of secondary and higher education in Pennsylvania now in progress on behalf of the Educational Commission of that state is the Foundation's current contribution in this direction. It is not a "survey." It is rather an effort to devise and apply certain practical procedures for transforming mass education into particular education and for enabling the individual to mount directly on his abilities and educational achievements. It is conducted not by an outside staff but by the institutions themselves. Any profit accrues therefore immediately to the institution, while the Foundation assembles, interprets, and publishes the results. The study has been actively under way for about one year of the four to six years for which it was planned, and there are certain aspects of it that lend themselves to a general report of progress. . . . .

The colleges at the beginning of the year undertook an analysis of their Freshman classes in order to supplement whatever information the formalities of admission might have brought out. The features of this inquiry were mainly three: tests, personal interviews, and a detailed record.

1. *Freshman tests.*—The tests recommended were of the objective type covering several fields and intended to show, irrespective of high-school grades or entrance examinations, the actual character of a student's intellectual equipment under working conditions, the accuracy and vividness of his ideas, and the areas of his greatest natural aptitudes. . . . .

In Pennsylvania, because of the newness of the plan, the test scores were little used for immediate guidance. To be serviceable in this way, the tests should be numerous, and the scores should be made immediately available to advisers and personnel officers, who then have the basis for a full and frank dis-

cussion with each new student as to his whole academic outlook. Such a system requires an organization that should develop later. It involves some expense. In the present study the scores were for the most part simply entered on the students' cumulative records, where they will furnish an invaluable supplement to the high-school and college marks when each record is studied.

2. *Freshman advisers.*—Of the steps proposed for studying the Freshman group, that of providing special Freshman advisers was the most difficult and expensive. Each of the co-operating colleges, therefore, carried out its own interpretation of the plan as best it could. The results have shown wide variation.

As first outlined, the plan called for the selection in each college of a group of experienced teachers or other college officers, each of whom should assume the responsibility for close personal relations with a small number of entering students. It was proposed that these advisers or tutors, having before them all the information that the college had received regarding the student, together with his test scores, should meet each Freshman, weekly at first, to talk over with him his preparation and general background, his tastes and interests, his purpose in coming to college, the meaning and possibilities of various college curriculums as wholes, the best ways of attaining different vocational goals, the differences between liberal, technical, and vocational education, and, in general, to orient the student intellectually in his new environment. . . . .

3. *Better individual records.*—Individual student records of a sort are everywhere in use today. They are bookkeeping devices for the convenience and protection of the college. They are rarely planned even remotely with a view to gathering comprehensively and to presenting effectively all or even many of the important facts that should be considered in guiding a student's college education. They often ignore the pre-college record completely, and of the college performance they regularly give merely the professors' verdict in those activities which entail the college's responsibility for attendance and "credit." Instructive facts such as physical health, the continuity of certain dominant abilities through high school and college, pursuits and achievements in leisure, vocational experiences, economic situation, personality, mental well-being, home and family background—these and many other items of importance are left wholly out of account. In the house of his Alma Mater, a student enjoys for four years the personal anonymity of a transient guest in a hotel.

To meet the need for a suitable record, a new form was devised and is now published by the American Council on Education. On this record a student's ratings in high school and college are presented graphically and comparatively over a period of years so that his particular mental pattern appears at a glance together with the tendencies of his intellectual development. Space is given for standard-test and achievement ratings of whatever nature, and provision is made for appropriate personal data on the same comparative and chronological basis, thus presenting an integrated history of a student's educational growth with the pertinent details.

A cumulative record of this inclusive sort presupposes a well-developed ad-

viser or personnel system. The fruits of inquiry on the part of advisers contribute steadily to the building-up of a significant record, while the record in turn furnishes a soundly considered basis for the further treatment of the student. A record so organized and used becomes an educational instrument of the first order. A physician's case history is a simple affair beside it. The delicate nature of its judgments, the skill and care required in maintaining it, the ability and will to apply it, are all evidences of the tendency to lift education out of a careless rule-of-thumb stage and allow it the benefit of whatever exact knowledge we can procure.

All of the co-operating colleges in Pennsylvania are using the new record in following the class of 1932. Existing data are easily transcribed, but the entries which give the card its significance—the objective-test scores and the findings of the advisers—depend upon the extent to which the study has been worked out locally. As withdrawals occur from term to term, these records are sent in to the Foundation to be analyzed. As already indicated, it is the absence of light on cases of this nature that is likely to prove the most illuminating discovery of this section of the study.

In addition to the foregoing account of the Pennsylvania study, the following statement prepared on behalf of the Association of College Presidents of Pennsylvania by M. G. Filler, president of Dickinson College, will be of interest to high-school teachers and principals in all parts of the United States.

The colleges subscribe to the following principles:

1. Learning students is a prerequisite to teaching them. The identification of students qualified for higher education is just as important as their preparation.

2. The colleges recognize that the responsibility for the identification and education of college youth throughout their entire school careers is shared jointly by the secondary schools and the colleges. College responsibility for the earlier stages of the education of college youth is not lessened by the fact that the actual teaching is done by colleagues not on the college staff. The best interests of college youth cannot be served until elementary- and high-school teachers realize that they are a part of the collegiate educational organization of the country. This joint responsibility cannot be fully met until elementary, secondary, and college teachers realize the essential unity of the educational process.

3. The colleges do not expect the high schools to "prepare for college" every type of student that goes to high school. The colleges do hope that the high schools will make every reasonable effort to adjust the curriculum and the pace to the real needs of college youths while in high school. The colleges believe that an earlier identification of college students and a more adequate differentiation in treatment of the college students in high school and other types of students in high school offer the surest foundation for improving the relations of secondary

and higher institutions. The Pennsylvania study of the relations of secondary and higher education has already shown that the problem will yield only to careful co-operative personnel work on a continuous and large scale throughout the whole educational ladder.

4. Colleges recognize the inadequacy of the present methods of selecting young people for higher education, based primarily on variable high-school standards, sometimes supported by subjective college-entrance examinations. The latter, even under the best conditions, are "snapshot" in character and, even if accurate for the moment, cannot be considered as sufficient revelation of twelve to fifteen years of study or of trends of development of capacities and enduring dominating interests of individuals.

5. Selection for higher education should be a process, not a single act, and should be based on trends of development as well as on status at any one time. The right of the student to an integrated education demands earlier identification of individual needs and closer co-operation and more co-ordinated procedures throughout the whole educational ladder, the fundamental guide throughout being the capacities and needs of the individual as determined by careful and continuing study of the achievements and enduring interests of students.

6. In view of these principles, the colleges are deeply interested in the possibilities of the cumulative record folder which is being tried out experimentally in many high-school systems under the auspices of the Pennsylvania study. This cumulative record will not only facilitate the selection of students for admission to college and the adaptation of the college offerings to their individual needs but enable the high schools to give constructive educational guidance to all types of students and to discharge their share of the responsibility for identifying college youth and for giving them appropriate instruction. One of the most promising features of this record folder as it is being used in the Pennsylvania study is the fact that full batteries of standardized achievement tests, giving more accurate and comparable measures than the usual subjective ratings of teachers, will be given twice a year over a considerable number of years. This feature, if carefully developed, will enable both high schools and colleges to observe the trends of development in the achievements and effective interests of individuals and will promote a genuine type of educational guidance which will be more constructive than the present "passing and failing" credit system of promotions.

7. With a view to facilitating such a study, the Association of College Presidents of Pennsylvania is ready to confer with the secondary schools of the state through the State Department of Public Instruction with a view to formulating courses of study in personnel methods for prospective teachers in the field of secondary and higher education, designed to enable them to cope more successfully than hitherto with the duty of learning students and of keeping meaningful and useful records of what they have learned about students.

EDUCATIONAL PHILOSOPHY: CHANGE, INVARIANCE, OR BOTH?

HIRAM B. LOOMIS
Hyde Park High School, Chicago, Illinois

Modern educational literature is permeated with the idea of change. Kilpatrick, in particular, in his *Education for a Changing Civilization* stands squarely for a "philosophy of change." The following quotations indicate his position.

> Change has become too obvious, too inclusive. Our young people face too clearly an unknown future. We dare not pretend that the old solutions will suffice for them. It appears that we must have a philosophy that not only takes positive recognition of the fact of change but one that includes within it change as an essential element. . . . .
>
> Certain it is that any who feel compelled to defend at all costs any fixed formulation, however made, must in consistent self-defense attack the doctrine of change here seen as implied in Darwin's theory. . . . .
>
> We must agree with James—our universe is wide open, the lid is off. We face an unknown future, not fixed as to goal. Whether we like it or no, a philosophy of change is the only one that can so deal with our world as to give us guidance. The present intellectual problem of man is to bring his thought world abreast of his scientific discoveries. Logic, ethics, religion, philosophy need to be remade into consistency with the situation. Otherwise they fail us in our need.[1]

The object of this article is to present the possibility of meeting a changing civilization by a different philosophy, a philosophy of invariance, and to indicate the necessity of distinguishing the domain in which invariance holds from the domain which is ruled by change, for the two domains are separate and distinct.

The idea of a philosophy of invariance comes from one of the most modern branches of mathematics. Lagrange was probably the first to recognize an invariant distinctly; but since his day numerous invariants have been noticed, and their importance has grown. Among the most far reaching in mathematics is invariance in an-

[1] William Heard Kilpatrick, *Education for a Changing Civilization*, pp. 41, 44, 83. New York: Macmillan Co., 1926.

harmonic ratio, on which depends the whole theory of poles and polars as well as that of projective geometry.

Examples from other fields, however, will probably give a clearer idea of an invariant. Every declarative sentence has a subject and a predicate. No matter how simple or how complex the sentence, no matter what the language, a declarative sentence must say something (the predicate) and must say it about something (the subject). This relation between subject and predicate does not change; it is static; it is an invariant. Consider the sentence "John throws a stone." No matter what the language in which this idea is expressed, there must be three words—one to indicate the thrower, one to indicate the act of throwing, and one to indicate the thing thrown. The relations between the three words are the same in all languages. Moreover, they are the same as the relations between the corresponding three words in the sentences "Mary reads a book" and "Henry bats a ball." The relations between the subject of a transitive verb, the verb, and its direct object are invariant. Let us go a step farther. If you want to tell where Henry batted a ball, or when Henry batted a ball, or how Henry batted a ball, or why Henry batted a ball, you will have to use a group of words. This group of words will bear an adverbial relation to the rest of the sentence, and this relation is the same no matter what the language. There are, then, in the very nature of language certain relations which do not change, which are static, which are invariant.

In the field of science it is safe to say that most, if not all, of the great advances in pure science have been the discovery of, and the more or less accurate statement of, invariants. A few illustrations must suffice. Cell division is invariant to the growth and reproduction of plants and animals. The growth of bacteria is invariant to such diseases as tuberculosis, diphtheria, and typhoid fever. Moreover, the kind of bacteria is invariant to each particular disease. A vibrating body is invariant to sound. The number and the kind of atoms in a molecule of common salt are invariant. The laws of physics, of chemistry, and of astronomy are invariants. Even Einstein's theory of relativity is a statement of invariance; that is, the same equations of physics hold for every observer no matter in what direction or at what rate of speed he may be moving.

The field of science is thus filled with invariants for the reason that, from its very nature, inductive reasoning is a search for invariance. The introduction of inductive reasoning has been said to be the point where modern science broke away from the philosophy of Aristotle. How do we reason inductively? We notice, for instance, that numerous animals have digestive systems; we find no animal, even though it consist of but a single cell, that has not the means of taking in and assimilating food. We conclude that all animals have digestive systems. In short, we find an invariant, a digestive system, in the group, animals. The illustration is typical. Every conclusion arrived at by inductive reasoning is an invariant.

The consideration of inductive reasoning is especially valuable because it leads naturally to the distinction between the domain of invariance and the domain of change. This distinction is important to the theses of this article—that there is a domain of invariance, that there is a domain of change, that the two domains are separate and distinct, and that the philosophy which neglects either is at least liable to error. In the one domain are the particulars from which an induction is made; in this domain there are variety and change. In the other domain are the generalizations made by the induction; in this domain there are constancy and invariance. In the domain of variety and change are the individuals John Smith, Henry Jones, Mary Adams, etc. In the domain of invariance there is simply *a man*, not a tall man nor a short man, not a big man nor a little man, not a white man nor a black man, but just *a man*. There are certain things that are constant and unchanging about *a man*, certain things that are true about any man and about every man.

An invariant, then, is a common characteristic of the members of a group. However much the individuals may differ, they are alike in the particular properties that make them members of the group. Four-footedness is invariant among quadrupeds. Wings are invariant among birds. Brains are invariant among men. Three sides are invariant among triangles. The spoken word is invariant among languages, etc. We have, then, two domains: first, events and individual things subject to infinite variety and change—the domain of the concrete, the domain of change; and, second, groups or classes with certain definite and unchanging characteristics which are pos-

sessed by every member of the group—the domain of the abstract, the domain of invariance.

What is the application of the two philosophies to education? Kilpatrick believes that the philosophy of change demands that our teaching be permeated with attempts to catch the problems of the future. For instance, he writes: "In more specific detail, by a proper study of society, its ways and its resources, we must look as far into the future as we can to catch its problems. This practice must permeate our curriculum."[1] A philosophy which gives due regard to the domain of invariance cannot agree with this attitude. Even though it is granted that the point of attack is the "social moral lag"[2] which is emphasized by Kilpatrick in the stress laid on the fact that the social sciences lag behind the natural sciences, these two questions must be faced: What must be done by the social scientist? What must be done by teacher and pupil? Answers to these questions will be sought by answering corresponding questions in the field of the physical sciences, in which marked and rapid progress has been made: What has the physical scientist done? What has the inventor done? What are probably the best lines of procedure for teacher and pupil?

The field of electromagnetism probably gives the most striking example of the contribution of physical science to the changes that have characterized the last quarter of a century. Michael Faraday was the first, and perhaps the greatest, contributor to pure science in this field. He did not try to anticipate future problems. He faced only the questions immediately before him. He had heard of Oersted's experiments and asked himself how electric currents and magnets interact. He moved a magnet toward a coil of wire, noticed that a current was induced in the coil, and determined the direction of the current. He moved the magnet away and made similar observations. From a large number of like simple experiments, he conceived the idea of a field of force with lines or tubes of force running through it. He sought fundamental laws; he sought invariants. He sought answers to such questions as: How is a field of force produced? What happens to a conductor moved to a field of force? What happens when a field of force is changed?

[1] *Ibid.*, p. 110. [2] *Ibid.*, pp. 61, 93.

After Faraday's discoveries inventions followed as a matter of course. The telegraph, the telephone, the dynamo, and the motor all existed in men's minds long before they became practical commercially. Such a little thing as the lack of fine insulated wire delayed the invention of the telegraph, for because of its lack Wheatstone gave up the idea as impracticable long before Morse's invention. Of course, Faraday probably realized that inventions would follow his discoveries, but he was not concerned with inventions. He sought fundamental laws and left the inventions to care for themselves.

Even a more striking instance of the part played by pure science, which always has gone in advance of invention, is found in Maxwell's electromagnetic theory of light. Because he knew that the discharge of a Leyden jar was vibratory and that the neighborhood of the jar was affected by the discharge, Maxwell realized that there are such things as electromagnetic waves. He therefore conceived the idea that the only difference between these waves and light is wave length. All that Maxwell did was to state a probable invariant—that light waves are electromagnetic waves. But what followed? Hertz made an electromagnetic vibrator that could send out waves of long wave length and also a mechanical eye that could see those waves. Since his time inventors have constantly improved the vibrators (sending sets) and the eyes (receiving sets), and the results are the wireless telegraph and the radio of today.

What, then, shall we teach in the field of physical science? Shall we try to anticipate the future or shall we be guided by the present? The problems which the physicists of tomorrow may have to face will not be considered, but rather a question which is bothering them today: How account for the facts that have led to the quantum theory? When mature physicists are in a dense fog, what can be expected of the high-school pupil or the junior-college student in facing the problem? Nothing definite in this field can be done without a profound knowledge of the laws of physics that have already been established. A thorough knowledge of the invariants already established is our only hope in meeting an unknown future. It would seem, then, that the objectives of education in the physical sciences should be threefold: first, training in the methods by which

scientists discover invariants; second, training in the methods by which inventors apply these invariants; and, third, knowledge of the most far-reaching invariants and of their most important applications. The third objective indicates the subject matter of a science course, while the methods of teaching are suggested by the first and second objectives.

The analogy holds for the social sciences. Though these sciences are in their infancy and their Newtons and Pasteurs have yet to appear, very considerable advances have been made by pure science in these fields. For example, there are certain characteristics that hold for any group—the family, the class in school, the athletic team, the co-operative apartment, the city, or the nation. What is called team work has its counterpart in every group. If the thought of team work is extended to include the world, the result is "world-mindedness," which is greatly desired by Kilpatrick and which he says "means a new history, a new geography, and probably a new inclusive social science."[1]

In the teaching of the social sciences the most important thing is the development of a social philosophy, or a social point of view. This result is best secured by dealing with the present, with conditions about which the pupil knows. He knows about the family, the class, and the team; and, whether or not the teacher intends the pupil to do so, he draws his social philosophy from the social groups with which he is acquainted and, by analogy, applies his philosophy to the groups with which he is not acquainted. In forming a social philosophy, each person picks out, consciously or unconsciously, what seem to him the properties or laws that hold in all cases; that is, he picks out what seem to be invariants. For this reason, at least one of the objectives of education should be to make this selection both conscious and critical.

That a man's social philosophy determines his opinions is shown by the fact that, wherever there is a real division in principle between political parties, on the one side are found the advocates of strong central government and on the other the adherents of personal liberty. Fundamentally, the same question arises in any and every group. Where is the dividing line which determines whether the will

[1] *Ibid.*, p. 74.

of the group or the will of the individual shall prevail? In other words, how shall we bound the neutral zone which separates that which is clearly in the domain of the group from that which is clearly in the domain of the individual? So thoroughly does a man's philosophy permeate all his thinking that, if you know a school teacher's idea of a good fire drill, you have considerable ground for a judgment of the extent to which he thinks the government should dictate to the individual.

On the supposition that the illustrations given in this article are typical, it would seem that the path of progress in the physical sciences, the path of progress in the social sciences, and the path of progress in education are essentially the same. Learn the past; observe the present; and look for invariants—the factors that remain unchanged in the realm of the abstract no matter how great the changes in the realm of the concrete. After testing in critical cases the validity of apparent invariants, hold fast to those that stand the test and use them to make the world of change do your will, for in the knowledge of invariants lies the power partly to control the changes of the future. In spite of change, it must be recognized that there are

> Truths that wake to perish never:
> Which neither listlessness, nor mad endeavor,
> Nor man, nor boy,
> Nor all that is at enmity with joy,
> Can utterly abolish or destroy.

SOME ASPECTS OF THE DEPARTMENT HEADSHIP IN SECONDARY SCHOOLS

HARLAN C. KOCH
University of Nebraska

In senior high schools the department headship is not taken for granted. Whether the office is justified or justifiable is a moot question. It is common knowledge that school administrators are not by any means agreed as to the value of the office. Some of them favor it enthusiastically, whereas others are quick to condemn it. Such meager literature as treats of the position tends to put the burden of proof not so much on the headship as on the central authority which created it. A fair statement of the conclusions of most writers who deal specifically with the professional possibilities of the headship is that, other things being equal, the position will produce favorable results directly proportional to the degree of freedom from routine obligations which the administrative authorities permit it to enjoy.

What are the facts? In spite of the controversial nature of the issues involved, a surprisingly small amount of information is available on the subject, most of which is subjective opinion. Such objective evidence as has been gathered has been severely restricted either to relatively small geographical areas or to a narrow range of schools. Then, too, in nearly every case the information was gathered not from department heads but from superintendents and principals. Although the writer lays no claim to completeness, he offers the present data as an extension of information in this field, since they were secured from superintendents, principals, and department heads, representing 171 high schools. These schools are located in 114 cities in 31 states. Every section of the country is represented. The populations of the cities range from 30,000 upward, the lower limit having been arbitrarily set. From the mass of information at hand certain selected aspects of the headship will be presented in this, and a later, article.

ARGUMENTS FOR AND AGAINST THE HEADSHIP

An initial inquiry was mailed to 369 superintendents with regard to the presence or the absence of the headship in their schools. Of these superintendents, fifty-eight failed to reply. Eighty, or 25.7 per cent, of the remaining 311 superintendents reported that they do not have such an office. Table I shows the reasons given by fifty-nine superintendents for not having department heads in their schools and the frequency with which each reason was mentioned.

TABLE I

OBJECTIONS TO THE DEPARTMENT HEADSHIP SUBMITTED BY FIFTY-NINE SUPERINTENDENTS

Objection	Frequency of Mention
The work can be done more effectively otherwise	28
It tends to destroy the unity of the organization	22
It increases expense; no evidence that results will justify the cost	15
The school is too small	10
The superintendent is opposed to "pyramiding" supervision and administration	6
Tradition is against such an office	3
It is merely a scheme for financial reward for long service	3
There is a lack of competent material	3
Department heads are a nuisance; too self-sufficient	2
"It is conducive to too many abuses"	1
"It is only too frequently a nominal position only"	1
"I can't see any use in perpetuating a myth"	1
"We find it too difficult to select heads in our school"	1

The opinions of the superintendents in whose schools department heads are found were not solicited. Instead, the 171 high-school principals were asked to comment on the desirability of the office, seventy-four of whom did so. Their replies have been roughly grouped in Table II.

Whether the silence of the principals in general indicates that they are not favorable toward the headship the writer is not prepared to say. At least the scant evidence presented shows that the strong points of the position, in so far as the opinions of the principals in question are concerned, far outweigh its weaknesses.

QUALIFICATIONS FOR THE POSITION

Seventy-one of the 171 principals from whose schools returns were received named the qualifications for the headship in their respective institutions. A wide range in the practices actually followed was disclosed, from city-wide competitive examinations to "no definite qualifications for the position."

TABLE II

OPINIONS OF SEVENTY-FOUR HIGH-SCHOOL PRINCIPALS AS TO DESIRABILITY OF THE DEPARTMENT HEADSHIP

	Frequency of Mention
Favorable opinions:	
It renders real service	18
The principal cannot do everything	15
It is indispensable	14
It has a valuable place	8
It is beneficial	8
The anticipation of appointment to the headship holds teachers in the system	2
Unfavorable opinions:	
Executive ability is hard to find	3
It causes excessive departmental self-interest	2
Department heads perform only limited service	2
Department heads have limited appreciation of their duties	2

Boston, Los Angeles, and Paterson, New Jersey, reported selection through examination. The Boston plan, a brief description of which follows, may be thought of as a modification of the competitive-examination idea.

Whenever a subject teacher wishes to obtain a position of head, he or she makes formal application to the Board of Superintendents to be placed on the so-called "rated list." Every three years new lists are made. The applicant fills out blanks, giving a comprehensive statement of preparation, special courses taken, experience as a teacher, activities in all walks of life, travel, etc. The board of examiners marks these papers and forms a rated list of all considered eligible for a position as head of a department in that particular subject.

The procedure in Los Angeles is as follows:

At least once during each school term the superintendent of schools calls for information from high-school principals as to vacancies in the position of headships of departments in various high schools or requests for creation of new

headships. This information is then tabulated, and announcements are made as to examinations for headships. These examinations are written, oral, and physical.

In Paterson eligibility to examination for a headship requires seven years of teaching experience in high school and the Bachelor's degree or its equivalent. No information is at hand as to the method of conducting the examination.

Thirty-two of the seventy-one principals named as requirements such qualifications as loyalty, sympathy, fine personality, ability to work with people, experience, leadership, professional devotion, initiative, and knowledge of subject matter. Only seven principals specifically mentioned the Master's degree as a requirement, and those rather casually. In five schools seniority dictates the selection of department heads. The remaining twenty-seven replies indicate that no particular attempt has been made to formulate standards of appointment. A loose classification might include these schools with the thirty-two in which such qualities as loyalty, sympathy, etc., were the only requirements named. The following is a typical statement. "We have no fixed standards for making this selection. We choose the person who, in our opinion, is best qualified."

SCHOOL ENROLMENT AND THE HEADSHIP

The question is frequently asked: How large should a school be before department headships are justified? Apparently there is no categorical answer, since departmentalization must depend for its justification on conditions which vary from school to school. Numbers do not constitute the only criterion. Table III presents the facts gathered in this study. For purposes of interpretation the data are weakened by the absence of at least two categories of information: (1) the percentage which the schools shown in each classification in the table is of the total number of schools of that classification in the whole country in cities of 30,000 people or more and (2) the relation between departmentalization and school size in cities with fewer than 30,000 people. Clearly, one would expect to find relatively few high schools with fewer than a thousand pupils in cities as large as those considered in this study. For the country at large the percentage of these smaller schools which actually are departmentalized

cannot be stated here. In so far as the 142 schools represented in Table III are concerned, 14.7 per cent have 900 or fewer pupils. These have department heads. The median lies in the 1,501–1,700 interval. Tables III, IV, and V combined suggest that, in schools having fewer than 901 pupils which are not included in this study,

TABLE III

DISTRIBUTION, ACCORDING TO SIZE, OF 142 HIGH SCHOOLS WITH DEPARTMENT HEADS

Number of Pupils	Number of Schools	Percentage of Schools	Number of Pupils	Number of Schools	Percentage of Schools
301–500	1	0.7	1,901–2,100	15	10.6
501–700	10	7.0	2,101–2,300	9	6.3
701–900	10	7.0	2,301–2,500	5	3.5
901–1,100	24	16.9	2,501–2,700	2	1.4
1,101–1,300	15	10.6	2,701–2,900	3	2.1
1,301–1,500	10	7.0	2,901–3,100	1	0.7
1,501–1,700	15	10.6	3,101 or more	4	2.8
1,701–1,900	18	12.7	Total	142	99.9

TABLE IV

DISTRIBUTION OF 171 SCHOOLS ACCORDING TO THE NUMBER OF DEPARTMENTS PROVIDED

Number of Departments	Number of Schools	Percentage of Schools	Number of Departments	Number of Schools	Percentage of Schools
1	2	1.2	9	12	7.0
2	3	1.8	10	12	7.0
3	4	2.3	11	4	2.3
4	7	4.1	12	13	7.6
5	16	9.4	13	5	2.9
6	27	15.8	14	5	2.9
7	25	14.6	15	8	4.7
8	28	16.4	Total	171	100.0

the number of department heads is small, the departments including, perhaps, languages, English, science, mathematics, and commerce.

THE DEPARTMENTS PROVIDED

Table IV shows the distribution of 171 schools according to the number of departments in each. The range is from one to fifteen, with a median of eight. The names of the departments and the

number of schools in which each is found are given in Table V. Table V indicates that the departments usually provided (if history and social sciences be combined, as they frequently are) are probably

TABLE V

FOURTEEN DEPARTMENTS REPORTED AND THE FREQUENCY OF MENTION OF EACH

Department	Frequency of Mention	Per Cent.
Languages*	141	15.5
English	127	14.0
Science	125	13.7
Mathematics	106	11.6
Commerce	102	11.2
History	64	7.0
Manual arts†	61	6.7
Social sciences	54	5.9
Home economics	48	5.3
Physical education	37	4.1
Graphic arts	25	2.7
Music	17	1.9
Public speaking	2	0.2
Normal training	1	0.1
Total	910	99.9

* Ancient and modern languages combined.

† This term includes 21 distinct designations reported by 61 schools; for example, industrial arts, 14; manual arts, 11; mechanic arts, 7; and manual training, 4.

TABLE VI

DISTRIBUTION OF 826 DEPARTMENTS ACCORDING TO THE NUMBER OF TEACHERS IN EACH

Number of Teachers	Number of Departments	Percentage of Departments
1–5	310	37.5
6–10	339	41.0
11–15	105	12.7
16–20	47	5.7
21–25	11	1.3
26–30	5	0.6
31 or more	9	1.1
Total	826	99.9

languages, English, science, mathematics, commerce, social sciences, manual arts, and home economics. The number of teachers in each of 826 departments is shown in Table VI. It is seen at a glance that

the number of teachers in the departments is usually small, since the median is 7.5. Doubtless the facts in Tables IV, V, and VI are determined by those in Table III, namely, the sizes of the schools.

THE COST

The amounts of additional salary received by 717 heads of departments are shown in Table VII. Not all the 910 heads of departments indicated the amount of salary they are receiving in excess of the amount that they otherwise would receive. Inspection of the irregular percentages of this table reveals scant commonality of policy

TABLE VII

AMOUNT OF ADDITIONAL SALARY RECEIVED ANNUALLY BY 717 HEADS OF DEPARTMENTS

Amount	Number of Heads of Departments	Percentage of Heads of Departments	Amount	Number of Heads of Departments	Percentage of Heads of Departments
$ 50	35	4.9	$ 600	17	2.4
100	80	11.2	650	14	2.0
150	21	2.9	700	24	3.3
200	115	16.0	750	1	0.1
250	51	7.1	800	3	0.4
300	90	12.6	850	1	0.1
350	39	5.4	900	5	0.7
400	117	16.3	950	2	0.3
450	21	2.9	1,000 or more	10	1.4
500	50	7.0			
550	21	2.9	Total	717	99.9

controlling the salaries of the heads of departments. The factors that dictate the amount of additional salary are not clear. Apparently, the question of compensation is a local problem. The median of the additional amounts reported in Table VII is $331.66. Table IV reveals that the median number of departments is eight. If each of eight heads of departments were to receive a marginal salary of $331.66, the annual cost would be $2,653.28. This calculation leaves out of consideration the cost of any alternative arrangement should these heads be dispensed with. The calculation is interesting because, it will be recalled, the superintendents indicated increased expense as third in frequency in their objections to the headship.

EXPERIENCE OF HEADS OF DEPARTMENTS

Table VIII indicates certain facts with regard to the experience of 907 heads of departments. The information is divided into two general categories, namely, experience as high-school teachers before appointment to department headship and experience as heads of departments. Table VIII shows that, so far as the number of years of teaching experience is concerned, the greatest promise of promotion to a headship lies between six and ten years, since 26.8 per cent of all teachers appointed to department headships had taught that

TABLE VIII

PERCENTAGE DISTRIBUTION OF 907 HEADS OF DEPARTMENTS ACCORDING TO NUMBER OF YEARS OF SERVICE AS HIGH-SCHOOL TEACHERS BEFORE APPOINTMENT TO HEADSHIP AND ACCORDING TO NUMBER OF YEARS OF EXPERIENCE AS HEADS OF DEPARTMENTS

Number of Years of Experience	Service as High-School Teacher before Appointment to Headship				Experience as Heads of Departments
	Men and Women	Men	Women	Difference in Favor of Men	
0.....	5.5	5.8	4.7	1.1	11.2
1–5.....	24.1	26.2	20.9	5.3	37.0
6–10.....	26.8	27.1	26.3	0.8	25.8
11–15.....	16.6	16.5	18.0	−1.5	13.2
16–20.....	13.9	12.5	15.9	−3.4	8.6
21 or more....	13.0	11.9	14.2	−2.3	4.1
Total....	99.9	100.0	100.0	.....	99.9

length of time. The next highest frequency is found in the interval immediately below—one to five years. Twenty-four and one-tenth per cent of the teachers appointed had taught from one to five years. Doubtless unusual personal and professional qualifications account for the fact that 5.5 per cent of the 907 heads were appointed without any previous teaching experience in high school. The implications of the headship are such as to make this normally low percentage strikingly high.

Table VIII gives a comparison of the appointments of men and women. Until the eleventh year of teaching men are favored more than women. The rapid withdrawal of men from teaching after a comparatively short period of service is apparently reflected in this

table. Then, too, it may be assumed that the disproportionate selection of men represents an attempt to encourage them to remain in school work longer than they otherwise would by bringing them the emoluments of an administrative office comparatively early.

Table VIII also gives the experience as department heads of the 907 individuals in question. It would be interesting to study the possible holding power of the headship, since certain principals believe that the anticipation of appointment to the office tends to hold the teachers in the systems. However, the requisite data are not at hand.

PROFESSIONAL PREPARATION

Both the undergraduate preparation and the graduate preparation of the 907 heads of departments are indicated in Table IX. The influence of accrediting agencies for secondary schools, such as the North Central Association of Colleges and Secondary Schools, is clearly reflected in the preparation of the heads of departments, especially in the undergraduate preparation. The percentages of heads of academic departments who hold the Bachelor's degree range from 94.9 in the case of ancient languages to 98.4 in the case of English, history, and science. Between these extremes lie in order mathematics (96.2 per cent), social sciences (96.3 per cent), and modern languages (97.1 per cent).

In this respect the so-called "non-academic" departments present a sharp contrast. This contrast is to be expected, since accrediting agencies usually do not demand graduation from college as a prerequisite to appointment in these departments. Nevertheless, there is evidence to support the conclusion that many of the heads of these departments have not slighted their preparation. The pattern is simply different. Indeed, some have unusually rich backgrounds upon which to project their work, and they have foregone the securing of a degree (a more or less empty formality, they insist) when superior preparation could be secured elsewhere than in institutions granting degrees. The percentages of the heads of the non-academic departments who hold the Bachelor's degree are as follows: physical education, 73.0; commerce, 64.7; home economics, 60.4; manual arts, 55.7; music, 41.2; and graphic arts, 36.0. However, the heads of the non-academic departments have prepared themselves

TABLE IX

PROFESSIONAL PREPARATION OF 907 HEADS OF DEPARTMENTS

DEPARTMENT*	UNDERGRADUATE PREPARATION						GRADUATE PREPARATION				
	Number of Heads of Departments	Number Holding the Bachelor's Degree	Percentage Holding the Bachelor's Degree	Number Reporting Undergraduate Major and Minor Subjects	Number Reporting Inappropriate Major and Minor Subjects	Percentage of Inappropriate Combinations	Number Holding Graduate Degrees	Percentage Holding Graduate Degrees	Number Reporting Graduate Major and Minor Subjects	Number Reporting Inappropriate Major and Minor Subjects	Percentage of Inappropriate Combinations
Ancient languages	39	37	94.9	33	0	0.0	16	41.0	16	1	6.3
Commerce	102	66	64.7	64	31	48.4	11	10.8	9	5	55.6
English	127	125	98.4	110	15	13.6	63	49.6	62	10	16.1
Graphic arts	25	9	36.0	8	2	25.0	1	4.0	1	0	0.0
History	64	63	98.4	62	5	8.1	30	46.9	30	3	10.0
Home economics	48	29	60.4	29	4	13.8	7	14.6	7	0	0.0
Manual arts	61	34	55.7	34	9	26.5	3	4.9	3	1	33.3
Mathematics	106	102	96.2	96	13	13.5	43	40.6	39	10	25.6
Modern languages	102	99	97.1	94	19	20.2	42	41.2	41	5	12.2
Music	17	7	41.2	6	2	33.3	1	5.9	.....	.....	.....
Physical education	37	27	73.0	27	8	29.6	5	13.5	3	0	0.0
Science	125	123	98.4	112	3	2.7	51	40.8	47	1	2.1
Social sciences	54	52	96.3	52	3	5.8	33	61.1	33	1	3.0
All departments	907	773	85.2	727	114	15.7	306	33.7	291	37	12.7

* Two departments of public speaking and one of normal training are omitted from this table.

for their work in many ways which cannot receive the formal recognition usually accorded courses of the traditional type; for example, attendance at special schools of art, music, commerce, and the like; travel in this country and abroad; and expert practical experience.

College degrees do not tell the whole story. What lies back of the degrees is significant. Column 5 of Table IX shows the number of heads of departments who reported their undergraduate major and minor subjects. Column 6 shows the number of heads of departments who reported "inappropriate" major and minor subjects. The term "inappropriate" indicates that, in the case of a given major subject and a companion minor subject, neither is pertinent to the work the person reporting is now doing. An extreme case is represented by the head of a commercial department who reported Latin as an undergraduate major subject and Greek as a minor subject. The range of inappropriateness is from 0.0 per cent in the case of ancient languages to 48.4 per cent in the case of commerce. The writer has been able to arrive at only one explanation of some of these amazing figures, namely, that the implications of academic scholarship do not, of themselves, dictate the choice of heads of departments. Rather, these implications apparently receive minor consideration. How else can be explained such incongruities as those represented by the departments of mathematics and modern languages, for instance? These two are not loosely organized subjects. Here, if anywhere, close agreement would be expected between the patterns of preparation and the functions of the heads of the departments. In this respect science presents a much better picture. An inspection of the graduate training of the 306 department heads who hold graduate degrees will show that this situation is not largely overcome through graduate study. The percentage of inappropriateness of the undergraduate preparation is 15.7, whereas the percentage of inappropriateness of the graduate preparation is but little smaller, 12.7. The graduate preparation reported does not on the whole comprise the work of an entirely different set of individuals. The case studies shown in Table X indicate a peculiar "persistency of inappropriateness" throughout both the undergraduate and the graduate periods of training.

STABILITY OF PREPARATION

The determination of the stability of the graduate and the undergraduate preparation of certain heads of departments was arrived at through a process of matching as indicated in Column 2 of Table X.

TABLE X

RELATION OF UNDERGRADUATE TO GRADUATE MAJOR SUBJECTS STUDIED BY 284 HEADS OF DEPARTMENTS AND RELATION OF UNDERGRADUATE TO GRADUATE MINOR SUBJECTS STUDIED BY 243 HEADS OF DEPARTMENTS

DEPARTMENT	NUMBER OF HEADS OF DEPARTMENTS WHO REPORTED MATCHED GRADUATE AND UNDERGRADUATE SUBJECTS	HEADS REPORTING UNCHANGED APPROPRIATE SUBJECTS		HEADS REPORTING UNCHANGED INAPPROPRIATE SUBJECTS		HEADS REPORTING CHANGES FROM APPROPRIATE TO INAPPROPRIATE SUBJECTS		HEADS REPORTING CHANGES FROM INAPPROPRIATE TO APPROPRIATE SUBJECTS	
		Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
	Major Subjects								
Ancient languages	15	8	53.3	1	6.7	6	40.0	0	0.0
Commerce	9	2	22.2	4	44.4	2	22.2	1	11.1
English	62	33	53.2	9	14.5	9	14.5	11	17.7
History	29	15	51.7	2	6.9	6	20.7	6	20.7
Home economics	7	4	57.1	1	14.3	1	14.3	1	14.3
Manual arts	3	1	33.3	1	33.3	1	33.3	0	0.0
Mathematics	39	20	51.3	8	20.5	10	25.6	1	2.6
Modern languages	39	25	64.1	4	10.3	7	17.9	3	7.7
Physical education	3	1	33.3	1	33.3	1	33.3	0	0.0
Science	45	30	66.7	2	4.4	9	20.0	4	8.9
Social sciences	33	25	75.8	2	6.1	0	0.0	6	18.2
All departments	284	164	57.7	35	12.3	52	18.3	33	11.6
	Minor Subjects								
Ancient languages	15	5	33.3	4	26.7	1	6.7	5	33.3
Commerce	9	3	33.3	4	44.4	1	11.1	1	11.1
English	49	5	10.2	35	71.4	2	4.1	7	14.3
History	26	3	11.5	15	57.7	3	11.5	5	19.2
Home economics	7	1	14.3	3	42.9	1	14.3	2	28.6
Manual arts	3	1	33.3	1	33.3	0	0.0	1	33.3
Mathematics	33	3	9.1	25	75.8	0	0.0	5	15.2
Modern languages	30	17	56.7	7	23.3	3	10.0	3	10.0
Physical education	3	1	33.3	0	0.0	1	33.3	1	33.3
Science	39	23	59.0	6	15.4	6	15.4	4	10.3
Social sciences	29	15	51.7	4	13.8	0	0.0	10	34.5
All departments	243	77	31.7	104	42.8	18	7.4	44	18.1

For instance, in 284 specific cases of the 306 who reported graduate degrees, as shown in Table IX, it was possible to match the major subjects. In similar fashion, 243 minors were compared.

The facts of Table X speak for themselves. Only a few general

interpretations will be called to the reader's attention. It has been said that graduate study does not largely overcome the "persistency of inappropriateness" disclosed in Table IX. This statement is supported by the data in Column 6 of Table X. The percentage of unchanged inappropriate major subjects is 12.3 for all departments; for the minor subjects, 42.8. Grouping two categories of values with regard to major subjects, namely, "Unchanged Inappropriate Subjects" and "Changes from Appropriate to Inappropriate Subjects" gives the total percentage of inappropriateness of graduate majors—30.6, or approximately one-third. The corresponding percentage for the minor subjects is 50.2, or one-half of the 243 minor subjects reported. Thus, a closer relation is shown between the graduate preparation of heads of departments and the subject-matter requirements of their offices in the case of their major subjects than in the case of their minor subjects.

The findings mentioned seem logical. Normally, strict specialization is expected in the major field. Breadth of training, then, is secured through the minor subjects. Group requirements and free electives also make their contributions. Therefore, the apparently irrelevant training disclosed may not be an unmitigated evil, since it is generally felt that narrow specialization in their subjects by high-school teachers tends to defeat the general educational aims of secondary education. However, it is disconcerting to find such a wide gap between the headship and adequate preparation for it, especially in the major fields. The gap tends to narrow somewhat in view of the fact that many heads of departments indicated that they had taken education as a graduate major or minor subject. This fact shows that these individuals are alive to the professional requirements of the position of head of a department.

EXTRA-CURRICULUM ACTIVITIES IN JUNIOR COLLEGES IN CALIFORNIA

WALTER CROSBY EELLS
Stanford University
R. ROMAYNE BRAND
Raymond High School, Raymond, Washington

In an earlier article[1] the writers reported the results of a questionnaire study of the opinions of more than three thousand students in twenty-eight junior colleges in California on various aspects of their work and life in these institutions. In addition to expressions of opinion, the questionnaire asked for certain information regarding participation of the students in extra-curriculum activities. The information supplied is summarized briefly in this article.

Replies were received from 3,058 students, representing 36 per cent of the 8,555 students enrolled in these junior colleges on October 1, 1928. Of the 3,058 students, 61.9 per cent were Freshmen; 33.7 per cent, Sophomores; and 4.4 per cent, special students. As the answers of the special students are not included in the analysis reported in this article, information submitted by 2,924 students is considered. Of these 2,924 students, 69.3 per cent were from the larger, more stable, and representative junior colleges of the district type; 25.4 per cent were from the smaller junior colleges of the high-school type; 2.5 per cent, from the single state junior college; and 2.8 per cent, from two small private junior colleges.

Early in the second semester of the school year 1928–29 each student was asked to check each of the following extra-curriculum activities in which he had participated while in junior college:

Football	Glee club
Basket-ball	Band or orchestra
Baseball	Honorary society
Track	Forensics
Minor sports	Publications
Dramatics	Other activities
School clubs	

[1] Walter Crosby Eells and R. Romayne Brand, "Student Opinion in Junior Colleges in California," *School Review*, XXXVIII (March, 1930), 176–90.

Table I shows the percentage of students in the entire group and in various subdivisions who participated in each of these activities. "Student offices" was written in so frequently that it is added to the

TABLE I

PERCENTAGE OF JUNIOR-COLLEGE STUDENTS IN CALIFORNIA WHO PARTICIPATED IN VARIOUS EXTRA-CURRICULUM ACTIVITIES

Activity	Total Number of Students (2,924)*	Students in District Type of Junior College (2,026)	Students in High-School Type of Junior College (744)	Freshmen (1,781)	Sophomores (989)	Men (1,443)	Women (1,327)
Football	13.2	10.3	18.0	11.3	14.6	23.9	.....
Basket-ball	17.8	15.7	24.5	16.6	21.3	20.7	15.6
Baseball	11.1	10.3	12.0	9.4	13.2	14.3	6.9
Track	11.3	11.6	9.1	10.8	11.0	19.6	1.3
Minor sports	24.4	24.0	25.5	23.7	25.7	23.0	26.0
Dramatics	13.9	13.8	16.8	12.3	18.8	13.5	16.0
School clubs	34.9	39.0	26.0	27.6	49.1	27.6	43.8
Glee club	13.5	14.5	12.2	11.3	20.3	12.5	15.3
Band or orchestra	6.2	5.5	7.5	5.3	7.3	8.2	3.7
Honorary societies	9.1	10.1	7.9	4.7	17.9	7.4	11.7
Forensics	3.7	3.4	5.4	3.1	5.6	5.8	2.0
Publications	11.8	11.8	12.4	8.0	19.0	13.0	10.7
Student offices	3.0	3.1	2.6	1.9	4.8	3.9	1.9

* Replies from the small number of students in the state and private institutions are included in the total but not in the groups classified by type of junior college, class, and sex.

TABLE II

PERCENTAGE DISTRIBUTION OF JUNIOR-COLLEGE STUDENTS IN CALIFORNIA ACCORDING TO THE NUMBER OF EXTRA-CURRICULUM ACTIVITIES IN WHICH THEY PARTICIPATED

Number of Activities	Total Number of Students (2,924)	Students in District Type of Junior College (2,026)	Students in High-School Type of Junior College (744)	Freshmen (1,781)	Sophomores (989)	Men (1,443)	Women (1,327)
0	26.4	27.0	25.3	32.0	16.7	22.3	31.2
1	23.7	24.3	23.1	25.8	20.1	22.7	24.6
2	21.8	21.7	21.2	20.7	23.3	23.5	19.6
3	14.0	13.7	14.5	11.4	18.8	14.8	13.2
4	8.0	7.3	9.7	6.7	10.3	9.3	6.5
5	3.9	4.2	3.2	2.5	6.6	4.4	3.6
6	1.8	1.6	2.3	0.7	3.6	2.3	1.3
7	0.4	0.2	0.7	0.2	0.6	0.7	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

list in the table. The relative importance of these activities, as determined by the frequency of mention, is indicated graphically in Figure 1.

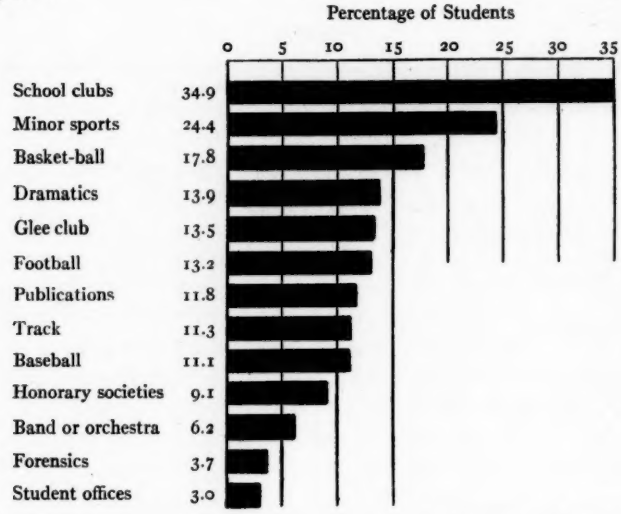

FIG. 1.—Percentage of 2,924 junior-college students in California who participated in each of thirteen types of extra-curriculum activities.

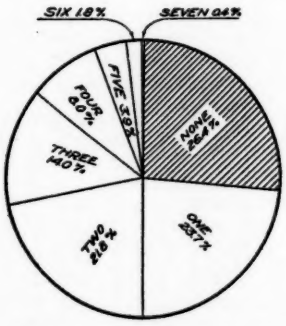

FIG. 2.—Percentage distribution of 2,924 junior-college students in California according to the number of extra-curriculum activities in which they participated.

The number of activities participated in by individual students is exhibited in Table II. The most significant facts in this table for the entire group of students are shown in Figure 2, from which it is seen that approximately one-fourth of the students (26.4 per cent) did not participate in any of the activities listed. Nearly one-fourth (23.7 per cent) participated in a single activity, while 14.1 per cent took part in four or more activities.

As would be expected, a larger percentage of Sophomores than of Freshmen participated in extra-curriculum activities, but the difference in percentages is only 15. That 68 per cent of the Freshmen took part in one or more of the activities is a remarkable showing, especially since the questionnaire was distributed when the school year was only a little more than half over. The difference between the percentage of men and the percentage of women who took part in extra-curriculum activities is approximately 9, primarily on account of the greater opportunity in athletics.

To realize the full significance of the data here presented, it would be necessary to have for comparison similar facts for Freshmen and Sophomores in four-year colleges and universities. Although such information is lacking, it appears that the junior colleges are giving ample opportunity to their students to secure the benefits that are generally conceded to result from moderate participation in extra-curriculum activities.

WHAT IS INDUSTRIAL EDUCATION?

THOMAS DIAMOND
University of Michigan

There is a tendency on the part of some educators to minimize the importance of industrial education. This attitude is due partly to lack of appreciation of the need of instruction in this field and partly to lack of information regarding the content of the courses offered. It is hoped that this article may be helpful in bringing about a better understanding of the situation, and it should serve as an indication of the point of view of a number of those who are actively engaged in carrying on the work of preparing young people for effective participation in industry.

The desire of every thoughtful individual in the United States is that all persons in this country should have equal educational opportunities. It is a matter of record that a large percentage of the young people in this country do not complete the work in the high school. Presumably a large proportion of those who do not complete their high-school education go to work, and many of them go into industry. If they are to have the educational opportunity to which they are entitled, they must be given such training as will enable them to adjust themselves to the environment which they will enter.

Examination of the literature relating to industrial education reveals the fact that there are a number of definitions of this type of education which indicate the aims of those responsible for the work. Perhaps the most common is the definition of industrial education as that form of education which prepares a person to follow more successfully a trade or industrial pursuit. If this statement is accepted, one might reasonably ask: Of what does this preparation consist? Does it mean the development of that skill which will enable the person to do the job he has in mind? Does it mean providing him with such information as will enable him to use his skill intelligently? Or does it mean the development of such attitudes toward work, toward

his fellow-workers, and toward the many perplexing questions which confront employer and employee as will make him a happy, contented, and efficient worker? If one takes a broad view of the field, one must conclude that, to be fully effective, industrial education should include all these objectives. Unfortunately, there are teachers who concern themselves only with the development of skill; others make considerable effort to assure themselves that their pupils acquire some related information; but relatively few make any effort to develop a reasonable point of view toward certain fundamental principles which affect any industrial organization.

There are teachers of academic subjects who conclude that, because there is a shop in their school, specific training is being provided for those who expect to go into industry. In other words, the presence of a shop in the school to them means industrial education. There are also shop teachers who firmly believe that, because they have a shop and a certain amount of equipment, they are training pupils for the field of industry. Furthermore, they would maintain that training for industry would be impossible if the equipment mentioned did not exist or were more limited in amount. The idea that individuals cannot be trained for profitable entrance into industry without shops and tools is altogether too common and indicates that those who subscribe to this view lack the breadth of vision necessary to enable them to see that the responsibility of the school goes farther than merely making an effort to develop skill. There is no desire to convey the idea that skill is not a valuable asset to a person entering industry. Neither is there a desire to suggest that shop training should be omitted from the curriculum. It is believed, however, that, in those cases in which the shop facilities are limited or are lacking entirely, much can still be done toward preparing a person to adjust himself to the environment found in an industrial shop.

For years industry provided all the training needed for the development of skill in its workers. It is believed that most of the training is still supplied by industry, in spite of the well-equipped shops in the schools. It is also true that the effectiveness of this training can be measured to a high degree of accuracy by means of the production of the persons being trained. However, it is not certain that industry attempts to develop proper attitudes on the part

of its workers. As a matter of fact, there are relatively few employers who make a conscious effort to provide instruction that will develop sane attitudes on the problems that are likely to disturb labor. Furthermore, there are no devices, such as production, by which the employer can measure the effectiveness of such instruction even if he supplies it. Since the employer in industry can and does develop skill in his workers and since he rarely undertakes the development of attitudes as a specific responsibility, it is believed that instructors in schools may profitably undertake the responsibility of developing proper attitudes even though circumstances make it impossible for them to provide definite shop training.

If this responsibility is to be assumed by the school, the question of the type of teacher needed is likely to arise. The person employed to develop the skill needed in industry is usually an expert in the field in which the training is being given. For the type of training considered in this article, the teacher must have more than skill in the occupation he represents or information pertaining to it. He must, first of all, be broad-minded, and he must have the ability to present debatable questions without bias. He must have a background of economics and an understanding of the application of psychology to the conditions in an industrial plant. He must have had considerable contact with industry, if not actual experience in it, and he must be familiar with the many questions which tend to cause friction between employers and employees. He must have the ability to lead discussions in a manner which will encourage the pupils to express their ideas freely, and he must be able to find the good in every suggestion offered while leading the group to see any fallacies it may contain.

Obviously, men with these qualifications are rare. However, since skill in a specific trade is not listed as a requirement, the teachers of this phase of industrial education need not necessarily be shop men. Shop teachers are in a strategic position to give the instruction, but it is observed that they seldom do so. If they appreciate their opportunity and responsibility and offer the instruction, they are to be commended. Regardless of whether the teachers are drawn from the shop or from the academic group, it is imperative that they appreciate and sympathize with the point of view of the worker. In-

struction of the type considered in this article may be given either in the shop as a related subject or in the regular classroom as one of the so-called "academic" subjects. The name under which the instruction is given, the place in which it is given, and the particular individual who gives it are all secondary to the question of whether it is given.

When one considers the type of material to be included in the course, one finds a broad field from which to choose. For example, it would be very much worth while to have every young person who goes into industry convinced that everyone who is a good citizen does some kind of work. It would be just as valuable if we could bring to his attention the fact that all people do not do the same kind of work and the fact that the man with the white collar may be working just as hard as the man whose job makes it desirable for him to wear a black shirt. Furthermore, it would make for greater contentment and thereby bring about greater efficiency if he could be brought to see that, regardless of whether he wears a white collar or a black shirt, his work is honorable and is worth doing well. Then, too, a young person will be able to adjust himself more readily to the conditions in industry if he has had presented to him the reasons why different rates of wages are paid for different kinds of work. The appreciation of these reasons will enable him to understand why a person who begins at a low wage may be doing so because he is receiving training which will prepare him for a much better position in later life.

If a young worker is to succeed in industry, he must learn, sooner or later, that an industrial organization is exactly the same as a football team inasmuch as there must be harmony within the group. Regardless of what a person thinks of his fellow-worker outside of working hours, it is absolutely essential that there be no unpleasantness between them on the job. If the young worker does not adhere to this policy, he is likely to become unpopular, and, when one becomes unpopular, unpleasant and irritating incidents are likely to occur. The reason for these incidents may be obscure, but the unhappiness of the victim is certain. If industrial education is the training of a person to adjust himself more efficiently to his environment in industry and thus to follow more successfully a trade or

industrial pursuit, are we not justified in including this social adjustment as a definite part of the work?

There are many questions regarding which the young worker may be misinformed because of lack of understanding on the part of a worker with whom he is associated. For example, some workers believe that the standard of living of a community goes up or down in direct proportion to the wages which are paid and fail to realize that one of the prime factors which affect this standard is the efficiency of the workers or producing agents. Others believe that the smaller the amount of work accomplished by one person, the greater the amount of work left to be done and, therefore, the better it is for society. Still others cannot understand that capital is just as necessary in business as labor and that the capitalist is not necessarily an evil monster who is continually seeking the downfall of the worker.

The young worker should be shown the reason why the article which he makes in the factory at a certain cost in labor and material should be priced much higher in a local store. He should be given information about the relation between cost and selling price. He should have brought to his attention the fact that light, heat, power, and rent in the factory are only a few of the expenses to be met from the money received for the article which he helps to make. He should be made to realize that selling the article costs money, and he should know that in most cases the goods which he helps to manufacture cannot be sold directly from the factory but must be handled by the so-called "middleman," who obviously must be paid for his work of handling and retailing the goods.

It is the lack of a clear understanding of these and other problems which is responsible for many of the disturbances created in industrial families. If we can send the young worker into industry with a sane point of view with regard to these problems, even though he has received no training in skill, we shall have done as much for him—and vastly more for industry as a whole—as we shall if we confine our efforts merely to developing skill. It is not suggested that an attempt be made to provide a course in economics; as a matter of fact, the formal principles of economics need never appear. The aim is to direct the thinking of the young worker toward reasonable

answers to the questions with which he is likely to be confronted when he becomes a producing member of an industrial organization.

Those interested in presenting instruction of this kind must be careful to distinguish between those matters which operate according to natural laws and those which have to do with questions of policy within a company. An example of the first of these would be the question of whether or not capital is necessary in the operation of a modern business. In spite of the fact that the answer to the question seems obvious, there are those who are in need of enlightenment on the subject. This is a question that is not influenced by opinion. Consequently, the reasons for the answer given may be discussed with profit. On the other hand, matters of policy within an organization are not debatable in a group such as we are considering. It is immaterial whether the policy is fair or unfair from the point of view of the worker, since he cannot change it by discussing it. If he proposes to work for a firm, he is expected to be in harmony with its policies. If he is not in harmony with them, he may exercise his right to withdraw from the organization. Obviously, therefore, any discussion in a classroom regarding the policies of a particular concern would be undesirable.

It is not the purpose of this article to argue for the abolition of shop courses. It is most desirable that they be continued and extended in so far as school budgets will permit. However, in these days of retrenchment, efforts to secure the necessary equipment are not always completely successful. This article has attempted to show that even in such cases much can be done to prepare young people for industry. Furthermore, in those cases where the maximum of equipment is available, it is believed that the work done should be supplemented by the type of instruction suggested in this article. If there is a realization of the importance of this type of instruction to young people who are entering industry, the work of industrial education will go on, and the young workers will go out into industry with a background that will enable them to evaluate the various philosophies with which they will come in contact when they are working.

HOW MANY AND WHAT SUBJECTS SHOULD A HIGH-SCHOOL TEACHER IN PENNSYLVANIA BE PREPARED TO TEACH?

J. S. HEIGES
State Teachers College, Shippensburg, Pennsylvania

INTRODUCTION

Much has been written in the past twenty-five years about the character of the training of the high-school teacher. One of the outstanding contributions along this line is the report of the Committee of Seventeen.[1] Many courses for the training of high-school teachers, which no doubt were inspired by this report, have been constructed and are being tried out in different states of the Union.

The state teachers' colleges in Pennsylvania have established a four-year course for the preparation of high-school teachers leading to the degree of bachelor of science in education. They have also established four-year courses in specific fields—public-school art, commercial education, health education, and public-school music—with corresponding suitable degrees. Even though good courses have been established in the various institutions of the state, some important problems still remain to be solved. One of the first problems encountered by the prospective teacher is: What shall I teach? The problem of the teacher-training institution is: What shall the prospective teacher be prepared to teach?

As far as can be determined, little has been done in Pennsylvania that will give the information necessary for answering these questions in an intelligent manner. There has been no extended nor adequate study of the number and the distribution of specific subjects assigned to teachers in the high schools in Pennsylvania. When the prospective teacher undertakes to select the subjects which he should be prepared to teach, he is guided by the whims of his fellow-

[1] "Joint Recommendations of the Committee of Seventeen on the Professional Preparation of High-School Teachers," *Proceedings and Addresses of the National Education Association*, XLV (1907), 536–38.

students or by his own attitude toward certain subjects. He does not consider the needs of the high school because he does not know them. On the other hand, when the writer, in common with others who are concerned with the training of teachers for secondary schools, has been called on to advise prospective teachers as to the subjects which they should pursue in order to meet the needs of the high schools in Pennsylvania, it has been necessary to give advice rather blindly. Therefore, it may properly be said that from the standpoint of the teacher-training institutions the objective of this study is the ability to give intelligent guidance as to elective subjects and that from the standpoint of prospective teachers the objective is the ability to select the proper subjects.

Before the problem is definitely stated and the facts discovered in this study are set forth, the scope of the investigation and the source of the data will be indicated. Through the courtesy of the officials in several bureaus of the State Department of Public Instruction of Pennsylvania, the writer was able to secure data for this study. The statistics gathered were obtained from reports submitted to the State Department of Public Instruction by the high-school principals and the superintendents in the various school districts of the state. In 1926–27 there were 1,150 high schools in Pennsylvania. Of these, 137 were two-year high schools; 158 were three-year high schools; 655 were four-year high schools; 70 were six-year junior-senior high schools; 20 were three-year senior high schools; 90 were three-year junior high schools; and 20 were unclassified. The high schools in Philadelphia and Pittsburgh, the 90 junior high schools, and the 137 two-year high schools were not included in this study. The number of high schools which were studied is thus reduced to 867. These 867 high schools were employing 8,197 teachers.

For this study the 867 high schools have been classified into two groups. In Group 1 there are 716 schools, consisting of four-year high schools, six-year junior-senior high schools, and three-year senior high schools. In Group 2 there are 151 schools, consisting of three-year high schools in which pupils can secure twelve Carnegie units. The tabulation of the data secured is made mainly on the basis of these two groups. In one instance, Group 1 has been sepa-

rated into the three following divisions: Division A—schools with thirty or more teachers; Division B—schools with eleven to twenty-nine teachers; and Division C—schools with three to ten teachers. Since this study involves 75 per cent of the high schools in Pennsylvania, or 95 per cent of the high schools after the elimination of the schools heretofore mentioned, the conclusions reached seem to be justified.

THE PROBLEM

In order that the objectives of this study—the ability to give intelligent guidance from the standpoint of the teacher-training institutions and the ability to make the proper selection of subjects from the standpoint of the prospective teachers—may be attained, the problem becomes that of determining (1) how many high-school subjects a high-school teacher in Pennsylvania should be prepared to teach and (2) desirable combinations of subjects. To answer these questions in a satisfactory manner, we must know not only the number of subjects being taught but also the combinations of subjects being taught by the high-school teachers in Pennsylvania. Therefore, the problem resolves itself into a careful study of the number of subjects taught and of the recurrence of the different combinations of subjects.

NUMBER OF DIFFERENT SUBJECTS WHICH TEACHERS WERE REQUIRED TO TEACH IN THE HIGH SCHOOLS IN PENNSYLVANIA IN 1926–27

Table I reveals the fact that in the high schools in Group 1 there are 5,570 teachers teaching but one subject, representing 71.1 per cent of the 7,834 teachers employed in this group of schools; 1,996 teachers, or 25.5 per cent, teaching two subjects; 258 teachers, or 3.3 per cent, teaching three subjects; and 10 teachers, or 0.1 per cent, teaching four subjects. These data show that 96.6 per cent of all the teachers in this group of schools teach either one or two subjects, while 3.4 per cent teach three or four subjects. Therefore, the teacher who is prepared in two subjects should have little difficulty in securing a position in which she is required to teach but two subjects.

Before the reader examines critically the analyses made of the

various tables that follow or interprets these tables for himself, his attention should be called to the fact that each of the following has been considered a subject: English, history (includes all social-science subjects), Latin, French, German, Spanish, mathematics, science (includes natural sciences, biological sciences, physiography, and everyday science), geography, library, agriculture, home economics (includes sewing and cooking), manual training, commercial branches (includes commercial geography and commercial arithmetic), physical education, music, and art.

TABLE I

DISTRIBUTION OF THE 7,834 TEACHERS IN THE 716 HIGH SCHOOLS IN GROUP 1 ACCORDING TO THE NUMBER OF SUBJECTS TAUGHT IN 1926–27

Number of Subjects Taught	Number of Teachers	Percentage of Teachers
1	5,570	71.1
2	1,996	25.5
3	258	3.3
4	10	0.1
Total	7,834	100.0

Table II presents the distribution of the teachers in each of the three divisions of schools in Group 1 according to the number of subjects taught. It should be read as follows: 1,923 teachers, or 89.5 per cent of those in Division A (schools having thirty or more teachers), are teaching one subject; 2,438 teachers, or 81.0 per cent of the teachers in Division B (schools having eleven to twenty-nine teachers), are teaching one subject; etc. In Division A and in Division B the percentages of teachers teaching but one subject are very high, while in Division C the percentage of teachers teaching one subject is below 50. Another interesting fact is that in none of the divisions is the percentage of teachers teaching more than two subjects above 10. In general, then, it can be said that the teachers in Divisions A and B should be prepared to teach one subject, while those in Division C should be prepared to teach two subjects.

Table III shows that in Group 2 there are 33 teachers, or 9.1 per cent of the total of 363 teachers in this group of schools, who teach one subject; 145 teachers, or 39.9 per cent, who teach two

subjects; 160 teachers, or 44.1 per cent, who teach three subjects; 22 teachers, or 6.1 per cent, who teach four subjects; and 3 teachers, or 0.8 per cent, who teach five subjects. This table also reveals that 84.0 per cent of the teachers in this group of schools teach two or three subjects, that only 9.1 per cent of the teachers teach one subject, and that only 6.9 per cent of the teachers teach more than three subjects. These facts make it clear that a teacher must be prepared to teach more than two subjects if he is engaged as a teacher in this group of schools. However, the number of teachers in this group of schools is small as compared with the number of teachers in all the schools in Pennsylvania, and any conclusions drawn affect only a small part of the teaching force of Pennsylvania.

TABLE II

DISTRIBUTION OF THE TEACHERS IN EACH OF THE THREE DIVISIONS OF THE 716 HIGH SCHOOLS IN GROUP 1 ACCORDING TO THE NUMBER OF SUBJECTS TAUGHT IN 1926–27

NUMBER OF SUBJECTS TAUGHT	DIVISION A (SCHOOLS WITH 30 OR MORE TEACHERS)		DIVISION B (SCHOOLS WITH 11–29 TEACHERS)		DIVISION C (SCHOOLS WITH 3–10 TEACHERS)	
	Number of Teachers	Percentage of Teachers	Number of Teachers	Percentage of Teachers	Number of Teachers	Percentage of Teachers
1	1,923	89.5	2,438	81.0	1,209	45.2
2	220	10.2	550	18.3	1,226	45.9
3	6	0.3	22	0.7	230	8.6
4	0	0.0	1	0.03	9	0.3
Total	2,149	100.0	3,011	100.03	2,674	100.0

TABLE III

DISTRIBUTION OF THE 363 TEACHERS IN THE 151 HIGH SCHOOLS IN GROUP 2 ACCORDING TO THE NUMBER OF SUBJECTS TAUGHT IN 1926–27

Number of Subjects Taught	Number of Teachers	Percentage of Teachers
1	33	9.1
2	145	39.9
3	160	44.1
4	22	6.1
5	3	0.8
Total	363	100.0

THE MAJOR SUBJECTS AND COMBINATIONS OF SUBJECTS TAUGHT BY THE TEACHERS IN THE 867 HIGH SCHOOLS IN PENNSYLVANIA IN 1926–27

Information as to the number of different subjects in which teachers give instruction is only a fractional part of the data needed in order to solve the problem. The chaotic—at least the apparently

TABLE IV

NUMBER AND PERCENTAGE OF TEACHERS IN THE 7,167 HIGH SCHOOLS IN GROUP I WHO TEACH EACH MAJOR SUBJECT SEPARATELY AND IN COMBINATION WITH ONE, TWO, AND THREE OTHER SUBJECTS

MAJOR SUBJECT	NUMBER OF SUBJECTS COMBINED WITH THE MAJOR SUBJECT								TOTAL NUMBER OF TEACHERS
	0		1		2		3		
	Number of Teachers	Percentage of Teachers	Number of Teachers	Percentage of Teachers	Number of Teachers	Percentage of Teachers	Number of Teachers	Percentage of Teachers	
English	937	53.7	670	38.4	136	7.8	4	0.2	1,747
History	797	45.9	776	44.7	154	8.9	8	0.5	1,735
Mathematics	735	48.2	663	43.5	117	7.7	9	0.6	1,524
Science	711	52.9	531	39.5	95	7.1	6	0.4	1,343
Commercial branches	710	90.9	64	8.2	6	0.8	1	0.0	781
Home economics	309	93.9	18	5.5	2	0.6	0	0.0	329
Latin	278	30.2	519	56.4	116	12.6	8	0.9	921
Music	230	81.6	45	16.0	7	2.5	0	0.0	282
Manual training	229	90.5	23	9.1	1	0.4	0	0.0	253
Physical education	194	66.4	85	29.1	11	4.0	2	0.7	292
Art	147	81.2	29	16.0	5	2.8	0	0.0	181
French	145	24.5	360	60.7	85	14.3	3	0.5	593
Library	42	85.7	7	14.3	0	0.0	0	0.0	49
Agriculture	41	59.4	26	37.7	2	2.9	0	0.0	69
Spanish	40	30.3	76	57.6	16	12.1	0	0.0	132
Geography	17	23.6	48	66.7	7	9.7	0	0.0	72
German	8	11.6	52	75.4	9	13.0	0	0.0	69

chaotic—combinations of subjects demand detailed and specialized study in order to determine the facts necessary for a policy of guidance and selection.

English.—Table IV shows that the subject taught by the greatest number of teachers in the high schools in Group 1 is English and that its four closest competitors are, in the order named, history, mathematics, science, and the commercial branches. This table also reveals that the highest percentage of teachers in any field teaching

a single subject is in the field of home economics. Ninety-three and nine-tenths per cent of the teachers of home economics teach only the one subject. Closely following home economics are the commercial branches, manual training, library, music, and art, with percentages ranging from 90.9 to 81.2. It is also interesting to note that, of the seventeen subjects listed, there are but four for which the percentage of teachers teaching each subject alone or in combination with one other subject is below 90. These are Spanish, German, Latin, and French, with percentages ranging from 87.9 to 85.2. In other words, less than 15 per cent of the teachers of any one subject teach more than two subjects.

Table IV also shows that there are 1,747 teachers of English in the high schools in Pennsylvania. Of this number, 937, or 53.7 per cent, teach English only; 670 teachers, or 38.4 per cent, teach English and one other subject; 136 teachers, or 7.8 per cent, teach English and two other subjects; and 4 teachers, or 0.2 per cent, teach three subjects in addition to English.

Table V shows that twelve different combinations of two subjects with English as the constant involve 191, or 11.0 per cent, of the English teachers in the schools in Group 1, while three combinations of two subjects one of which is English involve 479 teachers, or 27.5 per cent. This table also shows that the combination of English with history is the strongest combination which includes English, as 13.2 per cent of the English teachers are teaching this combination; that English combined with Latin is second, with 8.6 per cent; and that English combined with French is third, with 5.7 per cent. In other words, 81.2 per cent of all the English teachers teach only English or English with history, Latin, or French. Therefore, a student who is preparing to teach English should elect either history, Latin, or French as a second subject in which to be prepared.

History.—Table IV shows that, of the 1,735 history teachers in the schools in Group 1, 797, or 45.9 per cent, teach history only; 776, or 44.7 per cent, teach one additional subject; 154, or 8.9 per cent, teach two additional subjects; and 8, or 0.5 per cent, teach three additional subjects. Thus, 90.6 per cent of the history teachers teach either history only or history and one other subject. Table

TABLE V

NUMBER AND PERCENTAGE OF TEACHERS IN THE 716 HIGH SCHOOLS IN GROUP I WHO TEACH EACH MAJOR SUBJECT SEPARATELY AND IN COMBINATION WITH VARIOUS OTHER SUBJECTS

	Number of Teachers	Percentage of Teachers in the Subject	Percentage of Teachers in the Group (7,834)
English:			
English only	937	53.7	12.0
English and history	230	13.2	2.9
English and Latin	150	8.6	1.9
English and French	99	5.7	1.3
English and 1 of 12 other subjects	191	11.0	2.4
English and 2 or more subjects	140	8.0	1.8
Total	1,747	100.2	22.3
History:			
History only	797	45.9	10.2
History and English	230	13.3	2.9
History and mathematics	175	10.1	2.2
History and science	126	7.3	1.6
History and 1 of 11 other subjects	245	14.1	3.1
History and 2 or more subjects	162	9.3	2.1
Total	1,735	100.0	22.1
Mathematics:			
Mathematics only	735	48.2	9.4
Mathematics and science	259	17.0	3.3
Mathematics and history	175	11.5	2.2
Mathematics and Latin	72	4.7	0.9
Mathematics and 1 of 13 other subjects	157	10.3	2.0
Mathematics and 2 or more subjects	126	8.3	1.6
Total	1,524	100.0	19.5
Science:			
Science only	711	52.9	9.1
Science and mathematics	259	19.3	3.3
Science and history	126	9.4	1.6
Science and English	56	4.2	0.7
Science and 1 of 9 other subjects	90	6.7	1.1
Science and 2 or more subjects	101	7.5	1.3
Total	1,343	100.0	17.1
Commercial branches:			
Commercial branches only	710	90.9	9.1
Commercial branches and mathematics	20	2.6	0.3
Commercial branches and 1 of 10 other subjects	44	5.6	0.6
Commercial branches and 2 or more subjects	7	0.9	0.1
Total	781	100.0	10.0
Home economics:			
Home economics only	309	93.9	3.9

TABLE V—*Continued*

	Number of Teachers	Percentage of Teachers in the Subject	Percentage of Teachers in the Group (7,834)
Home economics and 1 or more subjects	20	6.1	0.3
Total	329	100.0	4.2
Latin:			
Latin only	278	30.2	3.5
Latin and English	150	16.3	1.9
Latin and French	133	14.4	1.7
Latin and history	91	9.9	1.2
Latin and 1 of 6 other subjects	145	15.7	1.9
Latin and 2 or more subjects	124	13.5	1.6
Total	921	100.0	11.8
Music:			
Music only	230	81.6	2.9
Music and English	14	5.0	0.2
Music and art	11	3.9	0.1
Music and 1 of 7 other subjects	20	7.1	0.3
Music and 2 or more subjects	7	2.5	0.1
Total	282	100.1	3.6
Manual training:			
Manual training only	229	90.5	2.9
Manual training and 2 or more subjects	24	9.5	0.3
Total	253	100.0	3.2
Physical education:			
Physical education only	194	66.4	2.5
Physical education and history	32	11.0	0.4
Physical education and 1 of 11 other subjects	53	18.2	0.7
Physical education and 2 or more subjects	13	4.5	0.2
Total	292	100.1	3.7
Art:			
Art only	147	81.2	1.9
Art and music	11	6.1	0.1
Art and 1 of 8 other subjects	18	9.9	0.2
Art and 2 or more subjects	5	2.8	0.1
Total	181	100.0	2.4
French:			
French only	145	24.5	1.9
French and Latin	133	22.4	1.7
French and English	99	16.7	1.3
French and history	51	8.6	0.7
French and 1 of 6 other subjects	77	13.0	1.0
French and 2 or more subjects	88	14.8	1.1
Total	593	100.0	7.6

TABLE V—*Continued*

	Number of Teachers	Percentage of Teachers in the Subject	Percentage of Teachers in the Group (7,834)
Library:			
Library only	42	85.7	0.5
Library and 1 of 6 subjects	7	14.3	0.1
Total	49	100.0	0.6
Agriculture:			
Agriculture only	41	59.4	0.5
Agriculture and 1 or more subjects	28	40.6	0.4
Total	69	100.0	0.9
Spanish:			
Spanish only	40	30.3	0.5
Spanish and French	26	19.7	0.3
Spanish and Latin	18	13.6	0.2
Spanish and English	14	10.6	0.2
Spanish and 1 of 3 other subjects	18	13.6	0.2
Spanish and 2 or more subjects	16	12.1	0.2
Total	132	99.9	1.7
Geography:			
Geography only	17	23.6	0.2
Geography and history	18	25.0	0.2
Geography and 1 of 10 other subjects	30	41.7	0.4
Geography and 2 or more subjects	7	9.7	0.1
Total	72	100.0	0.9
German:			
German only	8	11.6	0.1
German and Latin	17	24.6	0.2
German and history	16	23.2	0.2
German and 1 of 5 other subjects	19	27.5	0.2
German and 2 or more subjects	9	13.0	0.1
Total	69	99.9	0.9

V shows that the most frequent combination is history with English, this combination representing 13.3 per cent of the total number of history teachers. The second most frequent combination (10.1 per cent) is history with mathematics. The third strongest combination (7.3 per cent) is history with science. These facts may be stated in another way: If three students in a teacher-training institution were to prepare to teach history, the first selecting English as a minor subject, the second selecting mathematics as a minor subject, and the third selecting science as a minor subject, 59.2 per cent of the positions for history teachers in the schools in Group 1 would be open to the first person, 56.0 per cent to the second person, and

53.2 per cent to the third person. Table V also shows that 245 teachers must be prepared to teach eleven other combinations of two subjects.

Further study of Tables IV and V will enable the reader to make interpretations, such as the writer has made for English and history, for the remaining fifteen subjects.

Table VI shows that, in the high schools in Group 2, 91.0 per cent of the teachers of English, 89.8 per cent of the teachers of history,

TABLE VI

NUMBER AND PERCENTAGE OF TEACHERS IN THE 151 HIGH SCHOOLS IN GROUP 2 WHO TEACH EACH MAJOR SUBJECT SEPARATELY AND IN COMBINATION WITH ONE, TWO, THREE, AND FOUR OTHER SUBJECTS

MAJOR SUBJECT	NUMBER OF SUBJECTS COMBINED WITH THE MAJOR SUBJECT										TOTAL NUMBER OF TEACHERS
	0		1		2		3		4		
	Number of Teachers	Percentage of Teachers	Number of Teachers	Percentage of Teachers	Number of Teachers	Percentage of Teachers	Number of Teachers	Percentage of Teachers	Number of Teachers	Percentage of Teachers	
English	5	3.0	58	34.7	89	53.3	14	8.4	1	0.6	167
History	8	4.3	47	25.1	113	60.4	18	9.6	1	0.5	186
Mathematics	4	2.2	64	36.2	92	52.0	17	9.6	0	0.0	177
Science	4	2.2	64	36.0	93	52.2	16	9.0	1	0.6	178
Latin	2	1.4	36	25.2	85	59.4	19	13.3	1	0.7	143
French	1	5.9	5	29.4	7	41.2	3	17.6	1	5.9	17

90.4 per cent of the teachers of mathematics, 90.4 per cent of the teachers of science, 86.0 per cent of the teachers of Latin, and 76.5 per cent of the teachers of French teach from one to three subjects. This table also shows that more than 60 per cent of the teachers in each field teach three or more subjects and that there are more teachers who teach four or five subjects than teachers who teach only one subject. Since more than 50 per cent of the teachers in the schools in this group teach from three to five subjects, as shown in Table III, the student who is expecting to teach in the schools in this group should prepare in at least three subjects.

Table VII reveals the fact that the percentage of teachers teaching any particular combination of two subjects is so small that no valid conclusions can be drawn. Through the use of Table VII and

of statistics not reported here, the writer has found that there is a surprisingly large number of combinations, even when only the five

TABLE VII

NUMBER AND PERCENTAGE OF TEACHERS IN THE 151 HIGH SCHOOLS IN GROUP 2 WHO TEACH EACH MAJOR SUBJECT SEPARATELY AND IN COMBINATION WITH VARIOUS OTHER SUBJECTS

	Number of Teachers	Percentage of Teachers in the Subject	Percentage of Teachers in the Group (363)
English:			
English only	5	3.0	1.4
English and Latin	20	12.0	5.5
English and history	18	10.8	5.0
English and mathematics	10	6.0	2.8
English and 1 of 2 other subjects	10	6.0	2.8
English and 2 or more subjects	104	62.3	28.7
Total	167	100.1	46.0
History:			
History only	8	4.3	2.2
History and English	18	9.6	5.0
History and science	14	7.5	3.9
History and mathematics	8	4.3	2.2
History and 1 of 2 other subjects	7	3.7	1.9
History and 2 or more subjects	132	70.6	36.4
Total	187	100.0	51.5
Mathematics:			
Mathematics only	4	2.3	1.1
Mathematics and science	38	21.5	10.5
Mathematics and English	10	5.6	2.8
Mathematics and history	8	4.5	2.2
Mathematics and 1 of 2 other subjects	8	4.5	2.2
Mathematics and 2 or more subjects	109	61.6	30.0
Total	177	100.0	49.0
Science:			
Science only	4	2.2	1.1
Science and mathematics	38	21.3	10.5
Science and history	14	7.9	3.9
Science and English	7	3.9	1.9
Science and 1 of 2 other subjects	5	2.8	1.4
Science and 2 or more subjects	110	61.8	30.3
Total	178	99.9	49.1
Latin:			
Latin only	2	1.4	0.6
Latin and English	20	14.0	5.5
Latin and mathematics	7	4.9	1.9
Latin and history	5	3.5	1.4
Latin and 1 of 2 other subjects	4	2.8	1.1
Latin and 2 or more subjects	105	73.4	28.9
Total	143	100.0	39.4

TABLE VII—*Continued*

	Number of Teachers	Percentage of Teachers in the Subject	Percentage of Teachers in the Group (363)
French:			
French only	1	5.9	0.3
French and Latin	3	17.6	0.8
French and English	2	11.8	0.6
French and 2 or more subjects	11	64.7	3.0
Total	17	100.0	4.7

major subjects taught in the high schools in Group 2 are considered, namely, English, history, mathematics, science, and Latin. The only important facts revealed are (1) that the teacher in the schools in this group who is prepared to teach English, history, and Latin is eligible to fill 93 of the 363 positions and (2) that the teacher who is prepared to teach mathematics, science, and Latin is eligible to fill 87 of the 363 positions. These two combinations of three subjects are by far the strongest found in this group of schools.

CONCLUSIONS

The first problem of this study was to determine the number of subjects a prospective teacher should be prepared to teach. The facts presented warrant the following conclusions. (1) Prospective teachers for the schools in Group 1 need to make preparation to teach not more than two subjects. (2) Prospective teachers for the schools in Group 1 having eleven or more teachers—that is, for the schools in the first two divisions—need to prepare to teach but one subject. (3) Prospective teachers for the schools in Group 1 having less than eleven teachers need to prepare in two subjects. (4) Prospective teachers for the schools in Group 2 should prepare to teach three subjects and, in some cases, four subjects. (5) Since the number of teachers in the schools in Group 2 is small as compared with the number of teachers in the schools in Group 1 and since the schools in Group 2 are decreasing in number at the rate of 10 to 12 per cent each year, the first three conclusions should guide educational policy. The outstanding general conclusion is that stu-

dents preparing to teach in the high schools in Pennsylvania should receive special academic and professional training in two subjects.

The second problem of this study was to determine the best combinations of subjects for the prospective teacher. While the number of combinations of subjects in which teachers are giving

TABLE VIII

COMBINATIONS OF SUBJECTS MOST FREQUENTLY FOUND IN 867 HIGH SCHOOLS IN PENNSYLVANIA IN 1926–27

Major Subject	Minor Subject
English	History, Latin, or French
History	English, mathematics, or Latin
Mathematics	Science, history, or Latin
Science	Mathematics, history, or English
Commercial branches	Mathematics or history
Home economics	English
Latin	English, French, or history
Music	English or art
Manual training	Agriculture or mathematics
Physical education	History or mathematics
Art	Music
French	Latin, English, or history
Agriculture	Science or manual training
Spanish	French, Latin, or English
Geography	History
German	Latin or history

instruction is very large, some determination of the recurrence of combinations is not impossible. The chief finding of the study made of the combinations being taught consists in a list of combinations which should serve to guide prospective teachers in their choice of subjects. This list is given in Table VIII. In each case the first subject in the right-hand column makes the strongest combination with the major subject.

THE HOME ROOM

E. J. CORRIGAN
Cleveland Intermediate School, Detroit, Michigan

The home-room organization which is used in Detroit may be defined as a large number of one-room schools (forty, fifty, or sixty) gathered together under one roof with a central office to facilitate their proper functioning. Each of these one-room schools is made up of approximately forty pupils—twenty boys and twenty girls—with a teacher who acts in the capacity of sponsor, home-room teacher, or school parent of the group. The pupils are grouped homogeneously according to chronological age, intelligence, and school marks. The pupils in each group remain together during four of the six sixty-minute class periods of the school day. They are separated one hour each day for physical education and one hour each day for one of the following elected subjects: foreign language, vocational education, and commercial education. The daily home-room period is the first fifteen minutes in the morning.

The home room is the unit of organization of the school and is the center of the pupil's school activity. An illustration may be given by comparison. The family has at its disposal various agencies which contribute toward its betterment, such as the church, the school, the government, and the theater. In like manner, the home room has the classroom, assembly, clubs, athletics, supervision, administration, and organization, all of which contribute to the betterment of the home room—the hub of the school. In the home room character-training and citizenship are formally taught and marked.

In order that the home room may accomplish the utmost, objectives are formulated to serve as guides. The objectives are based on the objectives of education as a whole and on the objectives of the junior high school. The objectives are:

1. To furnish an opportunity for pupil participation in the administration of affairs concerning the pupils. This objective suggests a parliamentary organization. Boys and girls of junior high

school age have the ability, with the guidance of the teacher, to organize and conduct most of their own affairs. The following are some of the things they do: elect their own officers; keep the attendance record, which is checked by the home-room teacher; reduce tardiness and absence in their room; prepare programs for assembly; see that there is a lock on every locker; take care of themselves in the absence of the teacher; and handle many cases of discipline. These activities lend themselves to socialization. Boys and girls will be better able to live in a democracy and to solve their own difficulties if, while they are in school, they are furnished with opportunities such as those listed. The school becomes a little democracy instead of a miniature autocracy.

2. To emphasize and capitalize the worthy achievements of boys and girls. A business firm does not publicly criticize its employees or merchandise; it tries to remedy mistakes privately. Occasionally it becomes necessary to reprimand a group. However, more is achieved by finding a good point, however small, considering it an embryo, and helping it grow. Capitalizing pupils' assets overshadows their liabilities. Many things happen every day which may be emphasized. The group may win an intramural game. A classroom teacher may send a favorable report to the home room. After the report cards are marked, the scholarship and citizenship for the group may be determined. A pupil may perform some act of service for the group or the school. The school may win an athletic event.

3. To clear up pupils' difficulties. Since the home-room period comes first in the morning, it lends itself well to the clearing-up of difficulties that occurred the previous day or those likely to be encountered by the group during the day, such as a club meeting after school, a change of program, and the conduct of the day before. Discussion of such items in the home room avoids interruption of classes.

4. To start pupils happily on their day's journey. The breadwinner who leaves home in the morning with family disturbances in mind is likely not to be so successful as the person free from worries. The pupil at school encounters a similar experience. There is no doubt that much of the responsibility of the home-room teacher

is to see that her charges start for their first class with that feeling of happiness which has much to do with accomplishment. This goal is achieved by having the program or lesson well planned, by having a song by the group or an instrumental solo, by telling a joke, or by giving a word of encouragement. Not more than a minute or two of time is required, and much is contributed toward starting the pupils happily on their way.

5. To teach citizenship and to train character. While training in citizenship permeates the whole school atmosphere and is achieved incidentally through the various subjects taught, an attempt is being made to teach citizenship during the fifteen-minute home-room period. Suggestive lessons on leadership, service, courtesy, co-operation, reliability, self-control, tardiness, honesty, etc., are available for the home-room teacher. An explanation of the report card used will further clarify this objective. The card is divided into four parts: (*a*) Scholastic achievement, which is a measure of achievement regardless of conduct or ability. (*b*) Effort, which is a measure of the pupil's effort in terms of his ability (similar in meaning to the achievement quotient). A pupil with E in intelligence who accomplishes C in achievement would deserve A in effort because he is working up to capacity. (*c*) Citizenship, which includes six traits: leadership, service, courtesy, co-operation, reliability, and self-control. A separate mark is given for each trait. The pupil receives a mark in leadership corresponding to the degree to which he can successfully manage a situation without being directed. He receives a mark in service for some service he performs for the school outside the classroom work. He receives a mark in courtesy depending on how well he performs the accepted amenities of society. His mark in co-operation depends on how well he co-operates with the group. His mark in reliability depends on the extent to which he exhibits the qualities of a dependable and reliable person. His mark in self-control is determined by how well he is able to control himself in difficult situations. (*d*) Attendance.

The home-room teacher has one group during the home-room period for the entire three years and also teaches the same group in her particular subject of specialization, in order that she may become better acquainted with the pupils. If time permits, she visits their

classes to see how they are getting along and gives a word of encouragement to let them know that someone is vitally interested in what they are doing and to assure them that they are not being lost sight of in spite of the large enrolment in the school. She becomes familiar with home conditions by making personal calls or by inviting parents to come to the school. Pleasant visits and contacts with parents are encouraged, because these make for better co-operation from the parents if a problem arises in a child's school life. Since the home-room teacher is better acquainted with the pupils than is the principal or the counselors, many cases of discipline are reported to her, only the exceptional cases being handled by the higher authorities.

The home-room teacher is a mighty influence in determining the character and destiny of her group. "As is the principal, so is the school";[1] as is the home-room teacher, so is the home room. The duties performed by the home-room teacher are beyond question the most vital and far-reaching duties performed during the day. The home room is the unit of organization, the center of the pupils' school activities, and the most important institution in the intermediate school.

The following are illustrations of home-room activities.

TYPICAL HOME-ROOM PROGRAMS FOR A WEEK

Monday: Reading and discussion of notices from the office.

Tuesday: Grade assembly. Every grade—VII B, VII A, VIII B, VIII A, IX B, and IX A—is organized. With the guidance of a sponsor, the pupils conduct their own meetings. Each grade meets once every three weeks.

Wednesday: A lesson on honesty.

Thursday: A lesson on courtesy.

Friday: Evaluation by the pupils, with the aid of the teacher, of their citizenship for the week. The home-room teacher reads reports from the classroom teachers with favorable or unfavorable comments.

Monday: Reading and discussion of notices from the office.

Tuesday: Reading of the school paper by the pupils.

Wednesday: Assembly—a play on tardiness.

Thursday: Discussion of lesson on tardiness.

Friday: Continuation of discussion of lesson on tardiness.

[1] Ellwood P. Cubberley, *The Principal and His School*, p. 15. Boston: Houghton Mifflin Co., 1923.

Detailed Minutes of Three Home-Room Periods

Thursday

Meeting called to order at 8:30 A.M. by the president.

Minutes for Wednesday read and corrected.

Attendance taken, and permits signed by pupil O.K.'d by the teacher.

William H—— tried to sell tickets for the party of the honor society.

One pupil reported that he was still without a lock.

Program committee reported that it had not met on Wednesday but would meet tonight.

Further discussion of the disorder in Tuesday's English class. Home-room teacher said that she had been given an explanation of the matter and understood the situation better. Class as a whole was urged to make a better record in the future.

Program committee asked for the names of pupils who could furnish entertainment for the home room. Several names were listed.

Order blanks for seeds were given out, and Rowe B—— was appointed by the president to take care of the orders as they came in. Rowe asked that orders be returned as soon as possible.

Leadership discussion. Wilbur W—— read article about Captain John Smith and led a discussion about the article. Nancy S—— and Clyde W—— were asked to be ready to tell of instances of leadership that had come to their attention.

Representative of the school paper urged everyone to buy a paper on Friday morning.

Group sang one stanza of "America."

Meeting adjourned at 8:45 A.M.

Friday

Meeting called to order at 8:30 A.M. by the president.

Minutes for Thursday read and corrected.

Attendance taken, and permits signed by pupil O.K.'d by the teacher.

School paper sold by Billy E——.

Rowe B—— reminded the pupils to return their orders for seeds not later than Friday, March 15.

A communication concerning last semester's handbook was read and discussed. The pupils were asked how many had handbooks. They were then asked what they considered most helpful, what should be retained, and new features that might be added. Leslie W—— thought that the section about clubs was most interesting and that including the names of the members of the faculty and the numbers of rooms would be most helpful to new pupils. Edward B—— thought that we ought to retain the model excuse for absence and tardiness. Someone suggested that we have a calendar in the book. John G—— thought that the page showing the number of hours of credit for each subject was good. Moved and seconded that this discussion be continued on Monday.

The citizenship committee was asked to meet at 3:00 P.M. to get the marks ready for the report cards. Anyone who had during the week done anything which might change his mark was urged to make a written report to the committee.

Good report from the English class read.

Remainder of the time spent in reading the school paper. One pupil asked a few questions concerning money. These questions were suggested by an article in the paper.

Meeting adjourned at 8:45 A.M.

MONDAY

[Before the meeting was called to order, the leader of the day read the notices which were to be read to the class and which had been checked by the teacher. He asked for enlightenment on anything not understood.]

Meeting called to order at 8:30 A.M.

Secretary read the minutes of the last meeting, and corrections were made.

Attendance report.

Tardiness report and discussion of the penalty for tardiness.

Daily reports from the teachers discussed.

Chairman counted the number of pupils in the room to check the report for the office.

Locker report.

Chairman read the notices sent from the office, and a discussion followed.

Decided [The suggestion had been made earlier to the committee by the teacher.] to try one thing that day—to speak in refined tones, especially in the halls.

Class song, led by one of the pupils.

Meeting adjourned at 8:45 A.M.

The following is an outline supplied to the home-room teachers for a lesson on tardiness having for its objective the elimination of unnecessary tardiness.

LESSON ON TARDINESS

Home-room teachers should spend several home-room periods in teaching the benefits of punctuality and the evils of tardiness. This material is not to be read by the pupils but is to be suggestive for the teaching of the lesson.

To begin the lesson, have the pupils give the reasons for being tardy. Write these reasons on the board, and have the secretary make a copy for use when the lesson is continued the next day. The reasons given will be similar to the following:

1. Stopping along the way.
2. Not getting started early enough.
3. Sleeping late.
4. Detained by illness.

5. Cramp in the knee.
6. Clock slow.
7. Did not get up when mother called.
8. Train held up the street car.

After your list is made, each reason can be classified under one of the three following points: (1) tardiness due to the carelessness of the pupil, (2) tardiness due to the pupil's being detained by the parent, (3) tardiness due to outside forces over which neither the pupil nor the parent has control, such as a hard rain and illness. Study these three points carefully, and have the pupils discuss how each can be eliminated. Every pupil will eliminate causes falling under Point 1. For Point 2 have the pupil see that, if he has to go to the store to get bread, his mother has been careless, etc. For Point 3, the cure in most cases is allowing plenty of time to get to school.

Have the pupils list on the board the consequences of tardiness. They will be similar to the following:

1. Missing important notices read in the home room.
2. Coming late disturbs the class.
3. Your friends have to wait for you.
4. Develops unreliable habits.
5. Gains a poor reputation for you and your home room.

The next thing to take up is "How can I train myself to be prompt?" Discussion will bring out these methods:

1. Take pride in being on time.
2. Form the habit of being prompt.
3. Never permit yourself to be late.
4. Get up as soon as called or when the alarm goes off.
5. Plan on arriving with the entrance gong at 8:15 A.M.
6. Always allow for emergencies.

Devices for the home-room teacher to use in eliminating tardiness:

1. Having a contest between the boys and the girls.
2. Challenging another home room.
3. Having the president of the room call on the tardy pupils to account to the room for their tardiness.
4. Capitalizing promptness.

Educational Writings

REVIEWS AND BOOK NOTES

The problem of measurement in literature and composition.—Two recent publications in the Johns Hopkins University series of studies in education are devoted to problems of measurement in English—one in the field of literary appreciation and one in the field of composition. These studies are in line with an active interest in refining the objective measures which are current in these fields.

The measurement of appreciation developed through the study of literature constitutes a challenge to the modern spirit in education. Miss Broening's interesting report[1] of her experiment will offer valuable suggestions of method to the teacher of literature, whatever doubts one may have with regard to the validity of the test (developed by the author) with which the experimenter sought to fix definite quantitative indexes of appreciation. The Broening test follows the plan of Abbott and Trabue, but the scope of the test is extended to include typical prose selections, the spoiled versions in each case being carefully devised to "throw into relief the literary merit of the original." One of the most interesting and suggestive sections of the report is the discussion of the "experimental factor" of the situation:

> The literature period is the "playground" in which children while having a literary experience get satisfying practice in the reading techniques they have developed. . . . . The important matter is that these materials [of reading] be made "vivid realizations" to the pupils so that they may serve as touchstones for further adventures through reading. Some of the titles used give unit experiences of one- or two-period duration; others form the nucleus of extended reading through days and weeks; some furnish the core of a life interest. . . . . This extended reading, utilizing as it did the play, social, investigating, constructive, and art impulses of children, arose from reading focused on (1) a literary theme, the sea, (2) an occasion—Arbor Day, (3) a character type—the pirate, (4) a human motive, love of home, (5) a co-operative activity—entertaining the Parent-Teacher Association to arouse its interest in a school library [p. 36].

This method of attack apparently aids in intensifying those basic comprehensions which constitute a large element of appreciation. Evident also is the tend-

[1] Angela Marie Broening, *Developing Appreciation through Teaching Literature.* Johns Hopkins University Studies in Education, No. 13. Baltimore: Johns Hopkins Press, 1929. Pp. x+118. $2.00.

ency to organize literary experience into teaching units conducive to effective study and assimilation.

Miss Speer's study[1] of seven composition scales, which was conducted with a view to determining their comparative objectivity, deserves commendation for the clarity of the report and the careful attention to statistical detail. Some of the interesting conclusions are: (1) The Nassau Supplement to the Hillegas Scale requires the least time and yields the best—that is, the most objective—results. The Leonard scale stands second in these two respects. (The study deals with compositions of pupils in the sixth grade. These conclusions, therefore, apply at that grade level.) (2) "Discourse distinction scales" produce wider variations in judgments of untrained scorers than do "non-discourse" scales. (3) More objective ratings may be obtained by the use of general-merit scales than by the use of diagnostic scales. This conclusion applies in the case of both trained scorers and untrained scorers. (4) A statement of the relative merits and defects of each sample in a composition scale makes for objectivity. One of the most inviting "further problems" which Miss Speer suggests at the end of her report is: "What benefits result from putting a scale into the hands of the pupils?" The probable value of a composition scale as an aid in training the pupil's judgment through the appraisal of his own work deserves more experimental study than it has yet received.

The problem of measurement in English has proved to be elusive. The procedures followed and the advantages claimed by proponents of English tests and scales have not always been satisfying and convincing. Progress will be made not by elaborate defenses of existing devices or ready acceptance of alleged instruments of measurement but by closer agreement on the goals of instruction and clearer definition of these goals, continual experimental and scientific analysis of the product desired, and psychological validation of standards. These two recent studies from the Johns Hopkins Press and similar studies provide a stimulus for further intelligent effort in the direction of better evaluation of accomplishments in literature and composition.

Roy Ivan Johnson

Harris Teachers College, St. Louis, Missouri

A directed approach to periodical literature.—The tendency to bring into school instruction a wider range of present-day literature and more extensive materials relating to current events, which characterizes progressive work in almost all departments of the high school, has resulted in a greatly increased use of magazines and newspapers in the high school. The utilization of these powerful aids to education has revealed the necessity of instructing pupils in their

[1] Dorothy Speer, *An Experimental Evaluation of Seven Composition Scales.* Johns Hopkins University Studies in Education, No. 14. Baltimore: Johns Hopkins Press, 1929. Pp. x+86. $1.50.

proper use. A recent book[1] is intended to aid in giving the needed instruction. "The purpose of this book," according to the authors, "is to provide the teacher and the pupil with a directed approach to the wide field of magazine and newspaper reading" (p. v). Examination of the book is likely to convince teachers of its value in fulfilling its purpose.

There are eleven short chapters in the book, covering the whole range of materials profitable for high-school instruction. The first two chapters explore the field of periodicals and present the story of their historical evolution. The third chapter is entitled "Some Problems of a Magazine Editor," and the fourth chapter deals with the use of magazine reference guides. Succeeding chapters discuss the short stories, the poetry, and the non-fictional material in current periodicals. Chapters viii, ix, and x deal with newspapers, chapter x being a particularly helpful discussion of the use of newspapers in school life. Chapter xi is entitled "Special Problems for Individual Study."

Magazines and Newspapers of Today is so arranged that it can fit into an English course, providing the material for a unit of instruction six or eight weeks in duration, or it can be used chapter by chapter at separate points in the curriculum. The book is useful, moreover, beyond the bounds of the English department; in particular, social-science teachers can utilize it profitably in connection with instruction in current events. The value of the book is greatly enhanced by the inclusion of an extensive list of problems for study at the end of each chapter. These problems have grown out of the authors' experience in the classroom; indeed, the problems, as well as the use of pupils' themes and poems in the text itself, reveal the extent to which the book is the outgrowth of actual classroom conditions. The book is not made of fine theory; it deals definitely with fact and practice. In style of writing, it is delightful; its makeup is as attractive as its content.

The book, then, meets a recognized need in high-school work. It merits the attention of English and social-science teachers especially, and its use by pupils is likely to facilitate their adaptation to the world of magazines and newspapers—an increasingly important phase of our social environment. The book is a distinct contribution to the field with which it deals.

HOWARD E. WILSON

HARVARD UNIVERSITY

More about creative youth.—The second book[2] by Hughes Mearns about the creative activities of his pupils in the Lincoln School, New York City, is a conversational continuation and elaboration of the ideas and practices discussed in his first book. The first book, *Creative Youth*, contains an anthology of high-school poetry; the second includes a collection of high-school prose. It is the

[1] Gladys Campbell and Russell Thomas, *Magazines and Newspapers of Today*. New York: Harcourt, Brace & Co., 1929. Pp. x+210.

[2] Hughes Mearns, *Creative Power*. Garden City, New York: Doubleday, Doran & Co., Inc., 1929. Pp. viii+396. $3.50.

author's idea that, by sympathizing, by understanding, and by keeping out of the way except when needed, teachers may be helpful in stimulating creative power and in aiding it to find healthful and beautiful channels of expression. Such expression, he believes, is possible in some way for most normal pupils and is the flowering of the educative process.

The book is concerned with expression of youthful, creative power chiefly in literature because that is the subject the author teaches, but the idea is not restricted to any field. In his own subject, furthermore, the author does not give directions nor make plans. He simply tells what he has tried to do in his own classes and how he has succeeded. The chapters seem to have no logical sequence. As they simply discuss various phases of the work, any one of them can be read as a unit. The book is written in a popular direct style with much illustrative material; in fact, it is made up of bits of narration linked together with personal comments. It can be read with ease and pleasure by those interested in the creative life of young people whether their interest is professional or not.

Like a religious book, the book will have the most meaning and the greatest inspiration for those who already believe in its thesis. It will hardly convince the dogmatic teacher that the pupil's own critical opinion of a literary selection is the only one that has life-value for the pupil. It cannot inspire a teacher to present good poetry to his pupils if the teacher cannot distinguish good poetry from bad. It cannot move to wise sympathy those in whom there is no wisdom nor insight. It will, however, fortify all those who believe and will give courage to many who are struggling toward faith. It will reassure those teachers who are not afraid to allow pupils to find happiness in their work even at the expense of being called "easy marks" and of having their courses called "snaps."

GLADYS CAMPBELL

A survey treatment of art education.—The literature on art education is somewhat fragmentary and widely scattered. As a result, teachers in colleges and normal schools offering courses in art education have had difficulty in assembling adequate reading materials for students, and teachers of art in public schools have frequently been unable to obtain the guidance needed because of the dearth of literature on the teaching of art. A book[1] by Professor William G. Whitford provides for the deficiencies indicated through a comprehensive survey treatment of the various phases of art education.

The book contains twenty chapters and an elaborate classified bibliography. The first eight chapters present an excellent introduction to the teaching of art. The author introduces the section with a discussion of the historical development of art education and concludes it with a chapter on the modern approach to the teaching of art. Modern tendencies in art education are considered, and the needs for art in American life are discussed briefly. The practical value of

[1] William G. Whitford, *An Introduction to Art Education*. New York: D. Appleton & Co., 1929. Pp. xviii+338. $2.25.

art in the life of the school and the community is demonstrated, and suggestions are offered for the organization of a course of study in art.

The remaining chapters of the book deal largely with the organization and administration of art education. Guidance in the formulation of art courses at different school levels is furnished, and the problems of art instruction are considered. This part of the book is especially practical since the author has evidently tried to anticipate most of the problems that will be encountered in the teaching of art and has outlined procedures to help teachers solve their problems. The last chapter points out the need for research in art education, listing one hundred classified problems which challenge research.

Although the book was written chiefly for supervisors and teachers of art, any person desiring a general understanding of the place of art in everyday life and the part it can be made to play in the education of children will find it highly instructive and interesting. It is a unique contribution to the professional literature on art education.

W. C. REAVIS

Methods in teaching typewriting.—The various techniques used in teaching typewriting and the classroom conditions under which the teaching often takes place are set forth in a recent publication.[1] The content of the book may be judged from the chapter headings: "The Typewriting Teacher," "The Psychology of Typewriting," "The Learning Process," "The Teaching Process," "The Equipment in Typewriting," "The Beginner in Typewriting," "The Relation of Accuracy to Speed," "The Acquirement of Speed," "Tests and Contests," "Practical Applications—The Business Letter," "Practical Applications—Miscellaneous," "Special Methods and Records," "Standards of Attainment in Typewriting," "Grading Methods for Typewriting," and "The Correlation of Shorthand and Typewriting." Each chapter is followed by questions for discussion. The book also contains an extensive bibliography.

Devices useful not only to the beginning teacher but to the experienced teacher are found throughout the book. Teachers of typewriting often complain about the difficulties encountered in adjusting their system of marking to the marking system of the school. The discussion of the problems involved is valuable not only to teachers of typewriting but to anyone engaged in education. How to start the beginner in order that he may properly develop accuracy and speed is another crucial problem encountered by teachers of typewriting. Methods used by successful teachers are described and evaluated.

The teaching of typewriting concerns itself chiefly with the development of skills and habits. The psychology of typewriting as well as the teaching process is discussed in detail. Many studies in psychology have used typewriting as a means of experimentation. Hence the applications may be made directly. The quotations from the scientific studies that have been made are extensive and to

[1] Jane E. Clem, *The Technique of Teaching Typewriting*. New York: Gregg Publishing Co., 1929. Pp. vi+364. $2.60.

the point. The discussion of how skills and habits are developed is one of the outstanding features of the book.

The application of the Morrison technique, the project method, and the contract method to the teaching of typewriting is briefly discussed. As judged by the amount of space devoted to each, the contract method is favored. Since the book deals with the technique of teaching, this discussion would be more valuable if the Morrison and project methods were illustrated in as great detail as is the contract method.

The book fulfils the purpose of the author as expressed in the Preface: "to give to teachers and prospective teachers of typewriting the best methods the profession affords and thus furnish an opportunity to make more effective their ideals of instruction" (p. v).

W. W. MEYER

COMMUNITY HIGH SCHOOL, HARVARD, ILLINOIS

The application of psychological principles to learning.—An experimental study[1] has been made to determine how far the application of certain psychological principles in learning will contribute to the mastery of a unit in biology. The unit selected dealt with a group of fifteen communicable diseases. It was taught to two ninth-grade classes in the Lincoln School of Teachers College. Twenty-five pupils were in the experimental group; sixteen pupils, in the control group. Fourteen pairs of pupils reasonably equal in ability were included in the two classes, one of a pair in each class.

Thus, under the principles that the teacher should "attach responses to the situations in which they are to be used" and that "the greatest amount of transfer is to be expected when situations have as many elements in common as possible," the procedure with the experimental group was to imagine that a member of the group had gone home with a sore throat which later proved to be diphtheric; the following questions were discussed: "What should you do?" "What should your parents do?" "What should the New York health authorities do?"

The discussion in the control group was concerned with such items as "cause of specific disease, spread, symptoms, treatment, and prevention."

Some of the tests used were of the essay type, including such questions as the following: "What does the term 'immunity' mean to you?" "What do you know about typhoid fever?" Other tests were of the multiple-choice type.

The conclusion reached is that pupils acquire knowledge more readily when they are taught with due observance of the psychological principles than when such principles are disregarded.

[1] Anita Duncan Laton, *The Psychology of Learning Applied to Health Education through Biology:* An Experimental Application of Psychology in the Junior High School. Teachers College Contributions to Education, No. 344. New York: Teachers College, Columbia University, 1929. Pp. vi+104. $1.50.

The analysis of the unit into its specific objectives and the formulation of the teaching materials to achieve these objectives are a valuable part of the study.

E. R. DOWNING

Reading material for second- and third-year Spanish.—For several decades Chilean literature has been characterized by much realistic fiction of merit. However, with the exception of certain outstanding novels of Blest Gana, little material has been made available for classroom use. Instructors will therefore welcome an opportunity to become better acquainted with the Chilean group of writers through the excellent novelette *La hechizada*.[1]

The nature of Chile's population, her widely different environments and products, and her sharply drawn social distinctions offer a fertile field for novelists. *La hechizada* is a swiftly moving tale of absorbing interest, in which are contrasted the landed aristocracy, the working class, and an outlaw. The author is thoroughly conversant with the life on the ranch of *Las Pataguas*, which he describes with poetic feeling mingled with delicate symbolism.

The material is admirably suited for second-year intensive reading or third-year extensive reading. The vocabulary gradient is not too difficult, since it comprises the type of words used in Spanish-teaching throughout the country. Words peculiar to Chile are explained satisfactorily in the vocabulary, while necessary explanations of the text are found in the notes.

The editor has aimed at simplicity and directness. The introduction, notes, and vocabulary are reduced to a minimum, the text being thereby relieved of much unnecessary material. Should the teacher wish, each chapter may be made the basis for oral reproduction and free composition. These practical features and the story itself, with its atmosphere of pathos and romance, make the book very effective for young people.

MARY W. DILLINGHAM

A new French book for early reading.—*Les drôles aventures de Renard*[2] is another contribution to the Chicago French Series, by means of which Professor Otto Bond is responding to the demand for interesting but simple reading matter for pupils who are being taught to read as the first and main objective of the course in French.

The book is an adaptation in modern French of the charming old *Roman de Renart*, the medieval fable, which has been a source of amusement since the twelfth century because of its lightness of touch and its gentle irony that mocks at the feudal life of its time behind the mask of its animal heroes. The authors have chosen from the famous animal epic only such chapters as would justify

[1] F. Santiván, *La hechizada*. Edited with introduction, notes, and vocabulary by Alfred Coester. Stanford University, California: Stanford University Press, 1929. Pp. xii+136.

[2] Luigi A. Passarelli and André Pézard, *Les drôles aventures de Renard*. Chicago: University of Chicago Press, 1929. Pp. x+142. $1.35.

the title, *Les drôles aventures de Renard*, so that the pupils should find the book entertaining reading.

The book is divided into three parts: *Les premières armes de Renard, Renard et Isengrin le Loup*, and *Disgrace et triomphe de Renard*. Each part is subdivided into chapters, and the chapters are broken up into sections. In the first five chapters the sections consist of only ten or twelve lines each. This arrangement lends itself to reading very early in the course—the authors recommend beginning the book in the seventh or eighth week. Following each section there are ten or twelve lines called "dramatization." This material, intended for memorizing, repeats in dialogue form and with good conversational phrases the little story that has just been read. As the book progresses, the reading sections become longer, but the dialogues remain of approximately the same length. In each section there are exercises, which consist sometimes of questions, sometimes of a *complétez* that drills vocabulary, sometimes of three or four sentences calling attention to idioms, and sometimes of true-false statements, antonyms, synonyms, and other comprehension checks. The exercises are interesting and short enough to keep interest alive. The third part of the book takes account of the pupil's progress in reading ability and groups the sections in each chapter so as to make more continuity in the reading matter and puts the exercises at the end of the chapter.

The many animal names are listed at the end of the book with phonetic transcription, and the suggestion is made that equivalent names be used in English rather than translations. This is an interesting suggestion to help the pupil sense the spirit of the tales.

A few errors have been noted. On page 15 there is no subject matter in the text for Questions 13, 14, and 15. The circumflex accent has been omitted in the word *batlle* on page 17 and in the vocabulary, in the word *botte* on page 18 and in the vocabulary, and in the word *gatment* on page 55 and in the vocabulary. On page 38 *très* is written without an accent. On page 59 and in the vocabulary *imprisonner* occurs for *emprisonner*.

The book is attractively bound so as not to look like a schoolbook, is well printed, and has attractive pen pictures at the beginning of each chapter. Teachers and pupils will be grateful to the authors for making these gay old tales available for class use.

JOSETTE EUGÉNIE SPINK

A basic classroom textbook in French.—The purpose of a new textbook[1] in French is twofold: (1) to present the essentials of French grammar and vocabulary and (2) to give to the pupil a knowledge of French institutions, customs, history, and literature. The book is adaptable to use in junior high schools, senior high schools, and colleges. Its trend is toward the simplified grammar method and the development of the ability to read as advised by the Modern Foreign Language Study.

[1] Mathurin Dondo, *Modern French Course*. Boston: D. C. Heath & Co., 1929. Pp. xiv+546. $1.72.

The book is divided into two parts, there being fifty lessons in Part I and twenty lessons in Part II. The Introduction contains a discussion of phonetic symbols and principles, the French alphabet, and a list of expressions suitable for classroom use. A group of songs, an appendix, vocabularies, and an index complete the book. It is rich in interesting and appropriate illustrations.

In Part I each lesson consists of phonetic drill, reading material, questions, word lists, explanations of grammatical constructions, and grammatical rules. Translation is given an important place in the lesson. After each series of five lessons are a review with exercises based on the direct method and a *lecture*. In Part II the lessons are based on *lectures*, many of which tell of important French personages. A discussion in English of grammatical constructions, *devoirs*, and supplementary exercises follow the reading material.

The vocabulary and the lesson material are well chosen. A moderate number of new words are introduced by means of the reading material into each lesson in a logical association and natural environment. The selections for reading are interesting and afford an opportunity for studying the essential terms of the language. The vocabulary elements are sufficiently repeated and reviewed. The material has been so selected and presented that it sustains the interest of the pupil while furthering his knowledge of the subject.

The author states in the Preface that the reading material is made the basis of all instruction in grammar and that examples, derived from the reading, illustrate the rules. The discussions of grammatical constructions are, nevertheless, somewhat over-formalized. The grammar seems to be introduced not naturally, as needed for the more perfect expression of the thought, but largely for its own sake, even though it is based on the *lecture*. The explanations of grammatical constructions are in themselves entirely satisfactory.

The exercises are plentiful, connected, and graded. They serve to stress and to develop the material of the lessons. They present ample occasion for the review of vocabulary, idioms, and usage. The exercises in the reviews should be particularly valuable. Phonetics have been introduced into the text in a more or less detached manner. The introduction to phonetics and the word lists in phonetic script are adequate. Pronunciation is not, however, sufficiently stressed throughout the book.

RUTH V. NORMAN

A textbook in sociology for the senior high school.—In the words of the author of a textbook[1] in sociology for high-school pupils, "the keynote of the book is that of good citizenship: how to live the group life successfully. The development of one's awareness and conception of himself as a participator and co-operator is one of the great needs in modern education, whether one is to deal with a small circle of friends or to think in terms of international groups" (p. v). The book is divided into six parts: "The Individual and Society," "Types of Society," "Our Society: The American Nation," "Social Institutions and Phases of Amer-

[1] Ernest H. Shideler, *Group Life and Social Problems*. New York: Henry Holt & Co., 1929. Pp. viii+468.

ican National Life," "Selected Problems in National Community Life," and "Group Control, Human Nature, and the Making of the Individual Person." It can thus be seen that the author begins his book with a study of the group and concludes it by re-emphasizing the supreme importance of the group in determining the behavior of the individual.

Part Two, "Types of Society," is almost purely history. Unless the teacher guides the pupil very definitely through this part of the textbook, the pupil will see nothing more than the story of the development of primitive societies, whereas the author has, no doubt, intended to use the historical material for the purpose of developing the sociological principles which impel social organization.

Having traced the development of colonial town society and American plantation society in Part Two, the author considers the problem of molding these two separate societies into a nation in Part Three. The treatment is the conventional line of development. The chapter titles—"The Beginnings of a Great National Community," "The Adolescence of the Nation," and "Our Nation and Other Nations"—indicate the line of thought followed. The three chapters offer nothing that is new and seem to contribute very little to the development of the author's expressed purpose of teaching the citizen "to live the group life successfully."

In Part Four, in chapters entitled "The American Family and Home," "The School and Education," "Population, Races, and Nationalities," "Communication and Transportation," "The American City and City Life," and "American Rural Life and Problems," the author approaches some of the most profound modern social problems. He presents a wealth of material and a very sane point of view. Teachers will almost universally approve his declaration that "Americanization cannot be a sudden or mystic change but must come gradually. It means that the immigrant must come to feel himself as an American rather than an Italian or a Pole and that he will participate and share in the common life of the American nation" (p. 236). It is to be regretted, however, that the treatment of the school and education is neither adequate nor satisfactory. In modern society the school is, no doubt, a most important institution for the transmission of the social heritage, but the high-school pupil is not likely to get a fair comprehension of its importance in "passing on the social heritage" from a paragraph of only eight lines. In attempting to show that the school is functioning well, the author applies but two criteria—(1) the comparative wealth of those states that spend most and those states that spend least for education and (2) the money value of an education as measured by the incomes of persons who left school at fourteen years of age and of persons who left school at eighteen years of age. A course in sociology should either apply more satisfactory criteria or not attempt to deal with the question.

Part Five, which includes chapters entitled "Thrift and Conservation in Nation Building," "Socialism, Communism, Anarchism," and "Dependents, Defectives, and Delinquents," contains much well-selected material. It covers such a vast field that it might well be made the basis of a semester course in the high school. The case for socialism is so well stated that it would not be surprising

to find a misguided person here and there who would attack the book on the ground that the author has socialistic tendencies. The author redeems himself, however, by stating the case against socialism with equal clarity.

The book should prove helpful to those teachers who are looking for a textbook which presents a sane, sensible point of view and contains a rich fund of information. Most of the material in the book will have to be reorganized for teaching purposes.

W. A. BUTCHER

SENIOR HIGH SCHOOL, SOUTH BEND, INDIANA

A survey of occupations.—One of the major objectives of American public education is training for vocational efficiency. There is lack of agreement, however, as to the form which that training should take. There are courses which aim to give the pupil practice in a specific occupation in order that he may acquire certain skills and abilities before he enters the occupation of his choice. Other courses have exploration as their primary purpose. The pupil tries out several occupations in the school shops in order that he may more intelligently choose an occupation. Still another type of course or training is that which aims to give the pupil information with regard to all occupations. Several books have been published which are designed to give such vocational guidance. A recent one,[1] a vocational civics, aims to develop in the boy and girl of junior or senior high school age an understanding of the economic, social, and civic aspects of work. The book is an "orderly, systematic, and well-planned survey of the many different occupations," the chief purpose of which is to "create an interest in reading, observing, and thinking about occupations" (pp. v–vi). The planning of a life-career is the keynote of the book.

The book is divided into four parts. Part I, which contains three chapters, is entitled "Training for Efficiency." The theme of the three chapters is training for efficiency in both school and industry. Chapter i presents a somewhat trite discussion of the value and importance of an education. The pupil is reminded of the money value of an education, that "one day of schooling is worth $15.27" (p. 7). When will textbook-writers, and others, learn to be more critical of such statistics? The other two chapters are entitled "Need of Efficient Citizenship" and "How To Study the Different Occupations." Parts II and III contain an analysis of occupations, occupations for men being analyzed in Part II and occupations for women in Part III. Such an organization has, of course, advantages and disadvantages. If the textbook is to be used in schools where boys and girls are segregated in vocational courses, there is some advantage in grouping the occupations as they are grouped in this book. However, if the classes are mixed, certain problems in class procedure arise. The authors offer no suggestions in the Preface as to how the book should be used. Further, the reviewer noted a considerable amount of repetition or overlapping, unavoidable in such an or-

[1] Lewis W. Smith and Gideon L. Blough, *Planning a Career:* A Vocational Civics. Chicago: American Book Co., 1929. Pp. x+470. $1.44.

ganization. Obviously, many occupations are open to both men and women; the occupations for the two groups are not as sharply divided as the book suggests. The analysis of occupations in both parts is very thorough and inclusive, including even the occupation of undertaker. Part IV is entitled "Your Place in the World." It contains the following chapters: "How Will You Choose Your Life Work?" "How Can You Prepare for Your Life Work?" "How Can You Secure a Position?" and "Rewards and Promotion." Part IV is intended for both boys and girls. It includes suggestions and directions for the preparation of a "career book." Each pupil is expected to choose a vocation, make a thorough analysis of it, make an analysis of himself, and prepare a "career book."

The book has been prepared by two men whose experiences in the classroom and in occupations well qualify them for the task. The book is "the result of actual teaching and experimenting in the classroom, with a background of practical experience of the writers in some thirty different occupations" (p. v). The book is attractively bound and well illustrated. There are 126 pictures and etchings, many of which, unfortunately, give evidence of poor selection. Since pictures for textbook use are easily obtained, there is little excuse for including poor ones. In fifteen instances unattractive and unappealing zinc etchings have been used instead of actual photographs.

This survey of occupations should receive the careful attention of school officers and teachers of vocational civics. It is a contribution to vocational education.

HAROLD A. ANDERSON

CURRENT PUBLICATIONS RECEIVED

GENERAL EDUCATIONAL METHOD, HISTORY, THEORY, AND PRACTICE

BAGSTER-COLLINS, E. W., and OTHERS. *Studies in Modern Language Teaching.* Publications of the American and Canadian Committees on Modern Languages, Volume Seventeen. New York: Macmillan Co., 1930. Pp. xxxii+492.

BLACKSTONE, E. G. *Research Studies in Commercial Education, IV.* University of Iowa Monographs in Education, First Series, No. 11. Iowa City, Iowa: University of Iowa, 1929. Pp. 240. $0.75.

DIEMER, GEORGE W., and MULLEN, BLANCHE V. *Pupil Citizenship.* Yonkers-on-Hudson, New York: World Book Co., 1930. Pp. xii+340. $2.16.

HANNA, PAUL R. *Arithmetic Problem Solving:* A Study of the Relative Effectiveness of Three Methods of Problem Solving. New York: Teachers College, Columbia University, 1929. Pp. 68.

KIMMEL, WILLIAM GLENN. *The Management of the Reading Program in the Social Studies.* Publications of the National Council for the Social Studies, Number 4. Philadelphia: McKinley Publishing Co., 1929. Pp. 110. $1.00.

MORRISON, HENRY C. *School Revenue.* Chicago: University of Chicago Press, 1930. Pp. x+242. $2.50.

PRIDDLE, OAMER DANIEL. *Procedures in Developing Character Controls through Instruction.* Philadelphia: University of Pennsylvania, 1929. Pp. 148.

REAVIS, WILLIAM C., and WOELLNER, ROBERT C. *Office Practices in Secondary Schools.* Chicago: Laidlaw Bros., 1930. Pp. 240. $2.00.

RESEARCH COUNCIL OF THE MUSIC SUPERVISORS NATIONAL CONFERENCE IN CO-OPERATION WITH THE NATIONAL BUREAU FOR THE ADVANCEMENT OF MUSIC. *Survey of College Entrance Credits and College Courses in Music.* New York: National Bureau for the Advancement of Music, 1930. Pp. 210. $2.00.

The Teaching of Geometry. Fifth Yearbook of the National Council of Teachers of Mathematics. New York: Teachers College, Columbia University, 1930. Pp. x+206.

WATSON, GOODWIN, and SPENCE, RALPH B. *Educational Problems for Psychological Study.* New York: Macmillan Co., 1930. Pp. xii+352. $1.80.

BOOKS PRIMARILY FOR HIGH-SCHOOL TEACHERS AND PUPILS

BERRY, LILLIAN GAY, and LEE, JOSEPHINE L. *Latin—Second Year.* Newark, New Jersey: Silver, Burdett & Co., 1930. Pp. xviii+434+84. $1.80.

BOWLIN, WILLIAM R. *English Mastery:* A Laboratory System. New York: Charles E. Merrill Co., 1930. Pp. viii+342. $1.32.

CLARETIE, JULES. *Pierrille.* Adapted and edited by Grace Cochran and Helen M. Eddy. Chicago: University of Chicago Press, 1930. Pp. xiv+200. $1.35.

Fantastic French Fiction of Mystery and Emotion. Edited with introduction, notes, and vocabulary by James Burton Tharp. New York: Prentice-Hall, Inc., 1929. Pp. xii+190.

FISHBACK, ELVIN H. *Character Building for Junior-High-School Grades.* Boston: D. C. Heath & Co., 1930. Pp. viii+232. $1.00.

French Short Stories. Edited with introductions, vocabulary, and notes by E. C. Hills and R. T. Holbrook. Boston: D. C. Heath & Co., 1930. Pp. vi+386. $1.52.

GUTIÉRREZ, ANTONIO GARCÍA. *El trovador.* Edited with exercises, notes, and vocabulary by H. H. Vaughan and M. A. De Vitis. Boston: D. C. Heath & Co., 1930. Pp. xx+152. $0.80.

KEISTER, ALBERT S. *Our Financial System:* An Introductory Text. New York: Macmillan Co., 1930. Pp. xvi+494. $2.40.

KELSEY, RAYNER W. Handbooks of Citizenship: No. 1, *Prohibition,* pp. 32; No. 2, *Farm Relief and Its Antecedents,* pp. 32; No. 3, *The Tariff,* pp. 32. Philadelphia: McKinley Publishing Co., 1929.

MARSHALL, THOMAS M. *American History.* New York: Macmillan Co., 1930. Pp. xiv+748. $1.60.

MOLIÈRE. *Le bourgeois gentilhomme.* Edited with introduction, notes, and vocabulary by Albert Douglas Menut and Arthur Sayles Patterson. New York: Prentice-Hall, Inc., 1930. Pp. viii+158.

MORENO-LACALLE, JULIAN. *Elementos de español:* An Elementary Spanish Grammar for Schools and Colleges. Chicago: Benj. H. Sanborn & Co., 1930 (revised). Pp. lxii+466.

The Pathfinder: Readings from Modern Literature. Compiled by Lawton B. Evans. New York: Macmillan Co., 1930. Pp. xii+516. $1.20.

Stories of To-Day and Yesterday. Edited by Frederick Houk Law. New York: Century Co., 1930. Pp. xxvi+440. $1.10.

WEBSTER, EDWARD HARLAN. *Daily Drills for Better English,* pp. x+388, $1.48; *Oral Tests for Correct English:* A Teacher's Manual To Accompany "Daily Drills for Better English," pp. iv+88, $0.60. Yonkers-on-Hudson, New York: World Book Co., 1930.

PUBLICATIONS OF THE UNITED STATES OFFICE OF EDUCATION AND OTHER MATERIAL IN PAMPHLET FORM

CARMAN, HARRY J., BARROWS, THOMAS N., and WOOD, BEN D. Junior American History Test. Yonkers-on-Hudson, New York: World Book Co., 1929.

GLENN, EARL R., and OBOURN, ELLSWORTH S. Instructional Tests in Physics for High Schools and Colleges. Yonkers-on-Hudson, New York: World Book Co., 1930.

GLENN, EARL R., and WELTON, LOUIS E. Instructional Tests in Chemistry for High Schools and Colleges. Yonkers-on-Hudson, New York: World Book Co., 1929.

ORLEANS, JOSEPH B., and ORLEANS, JACOB S. Orleans Plane Geometry Achievement Test. Yonkers-on Hudson, New York: World Book Co., 1929.

Proceedings of the Fifth Annual North Carolina Conference on Elementary Education. Edited by M. C. S. Noble, Jr. Educational Publication No. 146. Raleigh, North Carolina: State Superintendent of Public Instruction.

Recent issues of the Office of Education:

Bulletin No. 33, 1929—*Record of Current Educational Publications Comprising Publications Received by the Office of Education, January–June,* 1929.

MISCELLANEOUS PUBLICATIONS

ALMACK, JOHN C. *Research and Thesis Writing.* Boston: Houghton Mifflin Co., 1930. Pp. xviii+310. $2.40.

DIXON, C. MADELEINE. *Children Are Like That.* New York: John Day Co., 1930. Pp. xiv+206. $2.50.

STRANG, RUTH. *An Introduction to Child Study.* New York: Macmillan Co., 1930. Pp. xiv+550. $2.75.